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Volume 12

Geometridae Part 3

Aberrational Forms.

Geometridae Vol. 3.

Index to Species.

abietaria Schiff.			lapponaria Dup.	P.	251.
see ribeata Clerck.		259.	leucophaearia Schiff.	E.	245.
abruptaria Thunb.	H.	256.	lichenaria Hufn.	C.	262.
advenaria Hbn.	C.	233.	limbaria Fabr.	I.	240.
aescularia Schiff.	A.	244.	lineata Scop.	S.	277.
alternaria Hbn.	S.	236.	litrata Clerck.	S.	237.
apiciaria Schiff.			luridata Bkh.		
see repandaria Hufn.		231.	see extersaria Hbn.		268.
atomaria Linn.	E.	274.	luteolata Linn.	O.	230.
aurantiaria Hbn.	E.	246.			
			macularia Linn.	P.	234.
belgiaria Hbn.			marginaria Fabr.	E.	247.
see fagaria Thunb.		279.	myrtillata Thunb.	G.	271.
betularia Linn.	B.	255.			
bistortata Goeze.	E.	266.			
biundularia Esp.			notata Linn.	S.	235.
see crepuscularia Hbn.		265.			
brunnearia de Vill.	S.	276.	obscuraria Hbn.		
brunneata Thunb.	I.	239.	see obscurata Schiff.		270.
			obscurata Schiff.	G.	270.
carbonaria Clerck.	I.	241.	ochrearia Rossi.	A.	280.
chlorosata Scop.	L.	278.			
cinctaria Schiff.	C.	257.	parallellaria Schiff.		
clathrata Linn.	C.	242.	see vespertaria Fabr.		232.
consonaria Hbn.	C.	267.	pedaria Fabr.	P.	249.
consortaria Fabr.			petraria Hbn.		
see punctinalis Scop.		264.	see chlorosata Scop.	27	278.
coracina Esp.	P.	272.	pilosaria Schiff.		
crepuscularia Dup.			see pedaria Fabr.		249.
see bistortata Goeze.		266.	piniaria Linn.	B.	275.
crepuscularia Hbn.	E.	265.	plumaria Schiff.		
			see brunnearia de Vill.		276.
dealbata Linn.			progemmaria Hbn.		
see lineata Scop.		277.	see marginaria Fabr.		247.
defoliaria Clerck.	E.	248.	prunaria Linn.	A.	228.
			punctinalis Scop.	B	264.
ericetaria de Vill.			punctularia Hbn.		
see brunnearia de Vill.		276.	see punctulata Schiff.		269.
extersaria Hbn.	E.	268.	punctulata Schiff.	A.	269.
fagaria Thunb.	D.	279.	repandaria Hufn.	E.	231.
fulvaria de Vill.			repandata Linn.	C.	260.
see brunneata Thunb.		239.	rhomboidaria Schiff.	C.	258.
			ribeata Clerck.	C.	259.
gemmaria Brahm.			roboraria Schiff.	B.	263.
see rhomboidaria Schiff.		258.	rupicaprararia Schiff.	T.	243.
gilvaria Fabr.	A.	281.			
			sambucaria Linn.	O.	229.
hippocastanaria Hbn.	P.	273.	strataria Hufn.	B.	254.
hirtaria Clerck.	L.	253.	strigillaria Hbn.	P.	282.
hispidaria Schiff.	A.	250.			
			vespertaria Fabr.	E.	232.
jubata Thunb.	C.	261.			
			wauaria Linn.	I.	238.
			zonaria Schiff.	N.	252.

urularia L. aberrational forms etc.

The type form is in the male, orange, coarsely marked with small fuscous strigulae, in the female pale yellowish, with more minute strigulae or dots.

ab. *aurea* Williams. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1946-47) p. 125 l. 14 f. 7 1947.
Female form in which the wings are of a deep ochraceous, almost yellow colour.

ab. *striolata* Klemensiewicz. Spraw. Kom. Fizyogr. Krakow 47 P. 119 1913.

= *pluriguttata* Williams. Proc. S. Lond. & N.H. Soc. (1946-47) p. 125 1947.

The fuscous striae are very numerous and are broadened, also lengthened and confluent, except, usually, in a small area at the apex of the forewings. In the male more heavily marked than in the female.

ab. *nigrilineata* Cockayne. Ent. Rec. 64 p. 241 1952.

On the forewing there is a black streak in the cell running from the discoidal cell towards the base.

ab. *fuscapiata* Williams. Proc. S. Lond. Ent. & N.H. Soc. (1946-47) p. 124 l. 12 f. 4 1947.

As in the type form but on the outer margin of the forewing is a fuscous blotch not extending to the apex, 2-3 mm. in width at its widest, nearest the costa, and extending to vein 3. Female with the fuscous blotch smaller.

ab. *spangbergi* Lampa. Ent. Tidskr. 6 p. 95 1895.

= *unicoloraria* Hormuzaki. Ent. Nachr. 20 p. 56 1894.

= *subalbipennis* Lambillion. Rev. Mens. Ent. Soc. 12 p. 98 1912.

= *unicolor* Matsumura. Journ. Coll. Agric. Hokkaido Imp. Univ. 15 p. 176 1924-25.

Unicolorous without fuscous irroration or strigulation.

Unicoloraria and unicolor have a few indistinct grey flecks but it is hardly necessary to separate them.

ab. *nigrolimbata* Joannis. Bull. Soc. Ent. Fr. 1908 p. 45.

On both wings a narrow dark border, at its widest at the apex, and narrower in the female than in the male.

ab. *griseoguttata* Williams. Proc. S. Lond. Ent. & N.H. Soc. (1946-47) p. 131 l. 12 f. 5 1947.
Wings with pale freckling, similar in tint to the bands of *aurocineta* Sh.

ab. *aluta* Williams. Proc. S. Lond. Ent. & N.H. Soc. (1946-47) p. 126 l. 12 f. 7 1947.

Parts of the wings are of a bone colour, as though bleached.

ab. *femineocoloris* Valls. Notul. Ent. 10 p. 40 1930.

Males in which the ground colour is yellow instead of the normal orange, being almost exactly the colour of the female.

ab. *coryllaria* Thunberg. Dissert. Ent. I p. 4 1781.

The basal and distal areas of the wings brownish, the median area remaining orange in the male and yellow in the female, not quite reaching the inner margin on the forewing and much less developed on the hind wing.

ab. *nickettaria* Prout. Ent. Rec. 15 p. 148 1903.

Basal area dark, as in *coryllaria*, but the costa at the base is narrowly of the typical ground colour; the central area is of the typical ground colour except at the extreme inner margin which is very narrowly fuscous; marginal area consisting of a narrow fuscous band, pyramidal, its base at the inner margin, its apex, ill-defined, just above nervure 6, this band followed by a narrow area of typical ground colour. Hindwings distinguished from *coryllaria* by having a blotch of ground colour at the apex.

ab. *infusata* Matsumura. Journ. Coll. Agric. Hokkaido Univ. 1917, I, 17, I, 17. The figure is very poor but the form would seem to be identical with *identata*.

ab. *postfusa* Williams. Proc. 3. Lond. Ent. & Nat. H. Soc. 1946-7 p. 135 pl. 14 f. 8 1947. Like *corylaria* as regards the forewings but the hindwings are uniformly fuscous with the exception of light scales, sometimes only perceptible with a lens, usually in the cell. The forewings are sometimes also very dark.

ab. *smartaria* Williams. Proc. 3. Lond. Ent. & Nat. H. Soc. 1946-7 p. 135 pl. 14 f. 6-7 1947. As in *corylaria* but with the central band of ground colour reduced, particularly towards the inner margin, where it may be completely or almost absent as far as the lower edge of the cell. The apical blotch is sometimes absent. Hindwings with the orange markings reduced, or absent except for a few scattered scales as in ab. *postfusa*. Female similar.

Williams applies the name to all dark forms of *corylaria* pattern in which the central band of ground colour on the forewings is reduced.

ab. *bimaculata* Williams. Proc. 3. Lond. Ent. & Nat. H. Soc. 1946-7 p. 135 pl. 14 f. 10 1947. Male with forewings fuscous except for an orange apical mark, a small orange spot at the distal end of the cell and a few orange striae on the costa. Hindwings fuscous with the exception of scattered orange scales in the cell.

ab. *douglasaria* Williams. Proc. 3. Lond. Ent. & Nat. H. Soc. 1946-7 p. 135 pl. 14 f. 8 1947. Male with the wings wholly fuscous with the exception of a very small spot of orange immediately beyond the cell of the forewings. Apical blotch absent. A few scattered dots or striae of orange on costa of forewing.

ab. *extrema* Williams. Proc. 3. Lond. Ent. & Nat. H. Soc. 1946-7 p. 134 pl. 14 f. 6 1947. Male, wholly fuscous with the exception of an orange apical mark and traces of orange striae on the costa of the forewings and at the distal end of the cell of both fore and hindwings.

ab. *wenzeli* Schawerda. Z. Ost. Ent. Ver. 7 p. 19 1921. (fig. Verh. z.-b. Ges. Wien. 1921-22.) male, wholly fuscous except for an orange-yellow patch on the costa of the forewing and another in the disc of the hindwings, a slight trace of orange on the inner margin of forewings.

This is an example of one of the darkest forms of *corylaria*, a male but with the ground colour of a female.

ab. *ochreata* Schawerda. Verh. zool.-bot. Ges. Wien. 71-72 p. (91) 1922.

Male in which the normal orange red bands of the ab. *corylaria* are replaced by ochre colour.

The name applies to male *corylaria* in which the bands are of female coloration and corresponds to ab. *feminecoloris* of the typical form.

ab. *selectaria* Rebel. Verh. zool.-bot. Ges. Wien. 64 p. (156) fig. 1914.

Very similar to the preceding.

Forewing with large brown basal area extending to the dark central lunule, rounded on the outer side, followed by a pure ochre-yellow central band becoming narrower towards the inner margin where there is a very narrow ochre-yellow line running towards the base but not reaching it. The outer marginal area smoky brown, widely extended, with an ochre-yellow apical spot. Hindwing ochre-yellow with a dark central lunule and a very wide smoky-brown marginal band, some dark speckling in the basal area.

Williams in Proc. 3. Lond. 1946-7 p. 133 says that this is altogether distinct from *ochreata* on account of the pale parts being almost intermediate between the normal male and female colours, pure ochre or golden-yellow.

ab. *fuscaria* Prout. Ent. Rec. 15 p. 150 1905.

= *frankaria* Lambillon. Rev. Mens. Ent. Jan. 12 p. 98 1912. See next page.

ab. fuscaria Prout. Ent. Rec. 15 p. 150 1903.

= franckaria Lambillon. Rev. Mens. Soc. Ent. Nam. 12 p. 98 1912.

= hasebroeki Kujau. Int. Ent. 1.27 p. 86 fig. 1933.

The dark shade which prevails in ab. corylaria is here spread over the whole of the wings, producing an unicolorous infuscated aberration.

ab. lutescensoida Horhammer. Int. Ent. 1.27 p. 293 1933.

Ground colour of the wings uniform yellow-brown but at the base of the forewing against the inner margin is a pale area of sprinkled normal ground colour running into it. In the same way a narrow zone on the inner margin of the hind wings. Apex and light marginal line become paler, without sprinkling and somewhat lighter yellow, particularly in the forewing, costa whitish yellow, finely sprinkled indicated narrowly throughout. The ray-like normal colouring at the base is completely distinct from that of corylaria where this part is uniformly darkened. Furthermore, in corylaria the fringes are chequered but in this form the fringes are without a trace of chequering and are uniformly dark brownish-grey, darker than the wing. In the author's opinion a case of complete confluence of the stiae in a transverse manner. It shows a certain resemblance to ab. hasebroeki but is not melanotic, hasebroeki has not the normal colouring at the base of the wing as is seen in this form.

ab. constreata Fuchs. Jahrb. Nassau Ver. Natur. 52 p. 145 1899.

Ground colour white, not orange-yellow. All wings densely sprinkled with brown, but whilst the sprinkling in ab. corylaria becomes solid, forming a broad basal and marginal band, the sprinkling in this form is rather uniformly spread out over the entire surface and only forms a narrow band at the margin of the forewings.

ab. pallidaria Prout. Ent. Rec. 15 p. 149 1903.

Freckling absent as in ab. spangbergi, but the portions of the wings which are infuscated in ab. corylaria have only a shadow of the darkening, a nondescript grey shade in the male, a golden brown tinge in the female.

ab. aureocincta Oberthur. Lep. Comp. 6 p. 274 pl. 155 f. 1498 1912.

Prout makes this form a synonym of his pallidaria but the description of the latter does not fit aureocincta. The bands are darker in this form, more than a "tinge" of golden brown, being deep golden brown.

The freckling is absent as in spangbergi, the pattern as in corylaria, the infuscated parts of a deep golden brown.

ab. pallescens Williams. Proc. S. Lond. Ent. & N.H. Soc. 1946-7 p. 132 1947.

The parts infuscated in corylaria are of a pale yellowish-grey, the remainder is a very pale yellow.

ab. juncta Williams. Proc. S. Lond. Ent. & N.H. Soc. 1946-7 p. 129 pl. 13 f. 4 1947.

A form of corylaria in which the central band of orange ground colour of the forewings is very much widened and at the costa is confluent with the orange apical patch which is usually present except in the darkest forms of corylaria.

ab. purpurascens Lampke. Tijdschr. Ent. 94 p. 306 1951.

The dark corylaria colour is of a purplish-brown tint.

ab. postmarginata Lampke. Tijdschr. Ent. 94 p. 305 1951.

Forewings normal corylaria type, on the hindwings the dark brown is only present in the shape of a narrow marginal band, the remainder being of the typical pale ground colour.

ab. minor Kiefer. Ent. 1.56 p. 16 1942.

This would appear to be a race, and not applicable to dwarf specimens occurring in Britain.

Sambucaria L. aberrational forms etc.

ab. *olivacea* Standfuss. Handb. Palaarkt. Sehm. 1896 p. 143 pl. 6 f. 10.

The wings with strong olivaceous suffusion, narrow yellow bands remaining contiguous to the usual lines.

ab. *destrigata* Lempke. Tijdschr. Ent. 94 p. 283 1951.

The line in the cell of the forewings fails.

ab. *delineata* Lempke. Tijdschr. Ent. 94 p. 283 1951.

The transverse lines on the wings fail.

ab. *pallida* Lempke. Tijdschr. Ent. 94 p. 283 1951.

The ground colour whitish.

ab. *cuspidaria* Bird. Ent. Rec. 21 p. 235 1909.

The distal margin of the forewing prominently toothed, or elbowed, at the third radial.

ab. *peterfii* Dioszeghy. Verh. Siebenburg Ver. Nat. 83-84 p. 131 1935.

The tail of the hindwings hardly 1 mm. long.

ab. *deflexaria* Schultz. Soc. Ent. 25 p. 84 1911.

The transverse lines on the forewings which are normally almost parallel, are very near to each other uniting at the inner margin but considerably separated at the costa.

ab. *superba* Chalmers-Hunt. Ent. Gaz. 1964. 15. p. 138. pl. 4. f. 2.

Forewing olive-grey beyond the postmedial line, also before the antemedial line, except costal margin and inner marginal area. Hindwing olive grey beyond the transverse line. On both wings the deep yellow of the transverse lines is only present in the darkened areas, is wider than usual, more diffuse, and reaches 1.5 mm. in width in the postmedial area of the forewing, traces of this colour are also present along the veins. Quite distinct from other forms but nearest to *olivacea* Standfuss.

luteolata L. aberrational forms etc.

ab. albescent Cockrell. Entomologist 21 p. 112 1888.
= laeticolor Harrison. Ent. Rec. 17 p. 338 1905.
= albicans Rebel. Berge's Schmett. 1910 p. 392.
The ground colour pure white.

ab. intermedia Harrison. Ent. Rec. 17 p. 338 1905.
Intermediate between the preceding albescent and the typical form. The wings of a very pale primrose colour.

ab. flavissima Krulikowsky. Soc. Ent. 23 p. 12 1908.
= immaculata Oberthur. Culot (Geom) p. 72 1919.
Almost entirely yellow with only slight remnants of the usual costal markings.

ab. delineata Lempke. Tijdschr. Ent. 94 p. 309 1951.
Every trace of the transverse lines fails, but the rest of the wing normal.

ab. apicolutea Cockayne. Entomologist 83 p. 54 pl. I f. 7 1950.
Forewing: the space between the costal mark at the end of the postmedian line and the apex is not filled in with rust colour to form the usual triangular mark, but is yellow; other markings normal.

ab. ruficosta Lempke. Tijdschr. Ent. 94 p. 310 1951.
The costa of the forewings completely or almost completely, red-brown.

ab. quadrilineata Nordstrom. Svenska Fjarilar. 1941 p. 298.
The forewings with four transverse lines, the hindwings with two.

ab. imunctata Osthelder. Schmett. Sudbavien 1931 p. 504. (Mitt. munch. Ent. Ges. 30p.)
Hindwings without a discoidal spot.

ab. emaculata Graeser. Berl. Ent. 4.37 p. 317 1892.
The apical triangular patch is completely absent. This includes the rust-coloured spot (sometimes blackish) on the costa at the end of the postmedian line which in ab. apicolutea Cockayne is still present.

ab. tangens Lempke. Tijdschr. Ent. 94 p. 310 1951. (descript. vol. 90 p. 147)
The two transverse lines of the forewings are joined together below the middle and then separate again.

ab. noskini Derome. Lamb. 28 p. 57 1928.
The upper longitudinal two thirds of the forewings covered with light fawn-brown. The fawn-brown wash covers about two thirds of the forewing, the lower part reaching towards the terminal border, but leaving in the upper part of this border a slight shade of the typical yellow. The discoidal spot and triangular spot at the apex appear well marked in their true rich red colour.

ab. alba Christoph. Iris 6 p. 14 1849.
The latin description is puzzling. Staudinger says that both sides of the forewings are colourless margined and the basal part of the forewing is brownish.

repandaria Hu'n.

=apiciaria Schiff.

aberrational forms etc.

ab. aurantiaca Rebel. Verh. zool.-bot. Ges. Wien 73 n. (5) 1924.

The ground colour of both wings unicolorous orange-red instead of gold-yellow.
The margins are of a much darker blue-grey.

ab. demarginata Hellweger. Grossschm. Nordtirols 1914 p. 267.

The blue-grey tint of the margins of both wings is completely absent.

ab. glabra Lempke. Tijdschr. Ent. 94 n. 3II 1951.

The thin dark striae on the wings fail.

ab. crasselineata Lempke. Tijdschr. Ent. 94 n. 3II 1951.

The postmedian line on the forewings is thick and black, narrowly bordered with grey.

ab. linearecedens Lempke. Tijdschr. Ent. 94 n. 3II 1951.

The postmedian line on both wings does not run to the apex, but reaches the costa at some distance from it, so that the form resembles the male of *E. parallelaria*, the line however runs much straighter.

ab. lateritia Rudolph. Notul. Ent. 6 p. 77 1926.

Upperside shiny roof-tile red with normal markings. Underside with more dense red-dish scaling and light veins.

vespertaria Fabr.

= parallelaria Schiff. aberrational forms etc.

ab. reticulata Lempke. Tijdschr. Ent. 94 p. 312 1951.

Female form with the dark striae of the male.

ab. fulva Cockayne. Ent. Rec. 46 p. 118 1934.

The ground colour of both wings is tawny and without strigulations on either surface. The antemedian line and the border distal to the postmedian line is deep quaker drab (Ridgway), much more leaden in hue than in typical specimens. Male.

ab. alba Cockayne. Ent. Rec. 54 p. 115 1942.

Female. The straw colour of the wings, head, thorax, abdomen and legs is replaced by white. The absence of straw coloured scales gives the border a redder tint than usual.

ab. dereticularia Rudolph. Notul. Ent. 16 p. 26 fig. 1936.

Male. On the upper and underside of both wings the numerous little black striae are absent, on the upperside also the cellular points. On the underside the veins for the greater part are brown-yellow, not red-brown as usual.

advenaria Hbn. aberrational forms etc.

ab. fulva Gillmer. Ent. 7. 17 p. 80 1904.

Wings dark yellow-brown, unmarked except for the discal dots.

ab. lilacina Lempke. Tijdschr. Ent. 94 p. 313 1951.

Ground colour pale lilac, with normal brownish markings.

ab. reducta Lempke. Tijdschr. Ent. 94 p. 313 1951.

The inner transverse line on the forewings fails, for the rest normal.

ab. fasciata Schwingenschuss. Verh. zool.-bot. Ges. Wien 68 p. (152) 1918.

The inner and outer transverse stripes of the forewing are lacking, consequently the brown inner shading of the outer stripe is widened to a uniform band, 3 mm. in width which includes the middle area, standing out well because the ground colour is whitish-yellow and the yellow-brown sprinkling in the outer area is reduced.

ab. rectilinea Strand. Arch. Naturg. 85 A 4 p. 34 1919.

The run of the outer transverse line of the forewings is very different in various specimens, sometimes straight, at other times forming a sharp angle. In this form the line is quite straight.

ab. aurantia Chalmers-Hunt. Entom. 1961. 94. p. 284.

Ground colour of all wings suffused with golden-yellow.

Geom. 234 continued.

macularia L. continued.

p. 2.

ab. quadrimaculata Hatchett. Trans. Ent. Soc. Lond. I p. 245 pl. 7 f. 3 1812.

The dark spots obsolete except the four on the costal margin of the forewing.

ab. nigrescens Lempke. Tijdschr. Ent. 94 n. 316 1951.

The black spots strongly enlarged and for the greater part coalescing.

ab. fuscaria Staudinger. Cat. Ed. 2 p. 159 1871.

All wings completely fuscous.

ab. albicans Oberthur.

The ground colour whitish.

macularia L. aberrational forms etc.

ab. transversaria Kroulikowsky. Soc. Ent. 23 n. 12 1908.

The spots of the forewings, more rarely those of the hindwings, are united into more or less complete bands.

ab. completa Cockayne. Entomologist 83 p. 54 pl. I f. 20 1950.

Extremely like the preceding, if not the same. The antemedian and postmedian rows of spots are united to form broad black-brown bands and the median forms a third band, which joins the postmedian half way across the wing; the subapical mark and the usual spot in the marginal area are present and there is another spot near the anal angle. Hindwing with the spots of the antemedian and postmedian rows are large and almost united to form bands; there is a large subapical mark and numerous small dots towards the base and along the inner margin.

ab. parvipunctaria Cockayne. Entomologist 83 p. 55 pl. I f. 5 1950.

All the usual markings are present but much reduced in size.

ab. zonata Cockayne. Entomologist 83 p. 54 pl. I f. 14 1950.

Forewing with the spots of the ante and postmedian rows fused to form two complete black-brown bands; the median is represented by a costal mark; the subapical mark is present and somewhat elongated; a few other asymmetrical markings are present. Hindwing with a broad complete postmedian band; the antemedian is represented by a broad mark, a continuation of the band on the forewing, ending a short distance from the costa; the only other marks are a few insignificant speckles; fringes chequered.

ab. radiata Loritz. Rev. Fr. Lep. II n. 133 1947. (pl. II f. I.)

The median area of upper and underside of the forewings is completely filled with black scales arranged in longitudinal blotches and stretching as broad rays parallel to the veins.

ab. radiata-interrupta Loritz. Rev. Fr. Lep. II n. 133 pl. II f. 4 1947.

Similar to the preceding radiata but the broad black band on the forewings is interrupted.

ab. krombholzi Sternek. Int. Ent. 1.25 n. 37 fig. 1931.

Margins of both wings golden-brown as far as the postmedian row of spots and including them. Basal area of the same colour as far as the antemedian row of spots in the forewing but not present in the hindwing, there being only one well developed spot in the centre of the wing besides the broad brown margin. In the forewing the central costal spot is the only dark mark in the wide yellow transverse band which is left between the basal and marginal brown bands.

ab. xantholeuca Bubacek. Verh. zool.-bot. Ges. Wien 74-75 p. (10) 1926.

Forewings bone-yellow, only suffused with orange-yellow at the base. Hindwings orange-yellow. Markings normal.

ab. brunneata Cockayne. Ent. Rec. 58 p. 95 pl. XI (2) f. 2 1946.

Ground colour of the wings brown instead of orange, markings normal.

ab. elegans Cockayne. Ent. Rec. 58 p. 95 pl. XI (2) f. 1 1946.

On the forewings the only markings are the basal line, the large discoidal spot, and a complete submarginal stripe; there are a few dark speckles on the costa and inner margin. On the hindwing the discoidal spot is present, and there is an almost complete submarginal dark stripe; there are a considerable number of speckles at the base, along the inner margin, and rather fewer along nervure 1; elsewhere they are very sparse. The main feature of this aberration is the absence of most of the usual spots and the confluence of those remaining to form a striking submarginal band.

notata L. aberrational forms etc.

ab. luteolaria Tengstrom. Acta Soc. Fauna et Flora Fenn 10 p. 317 1869.
The ground colour more yellow than in the type.

ab. innotata Fuchs. Jahrb. Nassau Ver. 54 p. 54 1901.
The dark group of small spots, distal to the postmedian line of the forewing, is absent.

ab. infuscaria Rebel. Berge's Schmett. 1910 p. 395.
Forewings deep yellow-brown with blackish veins and anterior margin stripes which reach to the base. The outer spot is entirely filled with black and elongated basad along the upper middle vein. Hindwings deep smoke-grey, outwardly more yellow-brown. Abdomen entirely black, with white margins to the segments.

ab. diluta Lempke. Tijdschr. Ent. 95 p. 197 1952.
All the markings present but very pale.

ab. uniformata Lempke. Tijdschr. Ent. 95 p. 197 1952.
Fore and hindwings without the transverse lines. Ground colour plain yellowish-white, with sharply contrasting costal and discal spots of the forewing.

ab. lunulacarens Lempke. Tijdschr. Ent. 95 p. 198 1952.
The fringe part of the incision on the outer margin of the forewings is not darkened.

ab. fuscomarginata Lempke. Tijdschr. Ent. 95 p. 198 1952.
On both wings a broad dark marginal band from the postdiscal line to the fringes.

alternaria Hbn. aberrational forms etc.

ab. demaculata Heinrich. Dtsch. Ent. 4. 1923 (Beiheft) p. 108.

= immacularia Dannehl. ~~Ent. 4~~ Ent. Z. 41 p. 348 1927.

On the forewings the black-grey spot on the outer side of the middle of the broad postmedian band is absent, apart from faint traces. Also the two black-grey spots on anterior margin are absent. Ground colour not whitish but more light brownish.

immacularia is so similar that it can hardly be separated -- The dark discal points are absent or entirely suffused.

ab. fuscomarginaria Dannehl. Ent. Z. 41 p. 347 1927.

The outer field darkened by a dusting of dark atoms in such a way that it is entirely similar to the brown transverse band. On the hindwing the basal and middle field show up strongly with their white dusting.

ab. costanuda Lempke. Tijdschr. Ent. 95 p. 199 1952.

The dark costal spots of the forewings are so pale that they no longer contrast with the ground colour.

ab. lineata Lempke. Tijdschr. Ent. 95 p. 199 1952.

Forewings with three sharply contrasting transverse lines.

ab. lutescens Lempke. Tijdschr. Ent. 95 p. 199 1952.

Ground colour of the wings with a distinct tinge of yellow through the dark grey.

ab. fusca Lempke. Tijdschr. Ent. 95 p. 199 1952.

Ground colour of the wings darkened, so that the transverse bands disappear. Only the normal black spots on the forewing remain visible.

ab. pallida Lempke. Tijdschr. Ent. 95 p. 200 1952.

Ground colour of the wings whitish, the dark markings therefore sharply contrasting.

ab. lunulacarens Lempke. Tijdschr. Ent. 95 p. 200 1952.

The fringe of the incision on the outer margin of the forewings not darkened.

liturata Cl. aberrational form etc.

ab. pallida Kaucki. Polsk Pismo Ent. 7 p. 187 1948

? ab. albescens Kaucki. Polsk Pismo Ent. 7 p. 187 1948.

Ground colour of the wings whitish, the markings normal.

ab. debrunneata Osthelder. Schmett. Sudbavern n. 507 1931.

= unicolorata Richardson. Ent. Rec. 64 p. 70 pl. II f. 15 1951.

The light brown postdiscal band of both wings fails completely.

Richardson's unicolorata is described as having the orange markings completely absent, replaced by normal ground colour.

ab. fuscata Foltin. Z. Zien. Ent. Ver. 27 p. 16 1941.

The whole specimen is darkened with dark brown dusting but the red-brown band is still present. Not the same as the unicolorous black-brown ab. nigrofulvata but darker than the typical form.

ab. trexleri Schaverda. Jahresber. Zien. Ent. Ver. 4 n. 163 1915.

Ground colour darkened, violet-grey, unmarked except for an ill-defined rust-brown postmedian band.

ab. nigrofulvata Collins. Ent. Rec. 17 p. 45 1905.

= nigra Rebel. Berge's Schmett. 1910 p. 395.

Wings black-brown, almost black, excepting the tawny postmedian band.

ab. semivirgata Cockayne. Ent. Rec. 65 p. 241 1953.

The median line of the forewing is displaced towards the base and fused on the costa with the antemedian line.

ab. lineata Lempke. Tijdschr. Ent. 95 p. 202 1952.

Forewings with sharply contrasting transverse lines.

ab. contrasta Lempke. Tijdschr. Ent. 95 p. 202 1952.

Ground colour rather pale; the brown band on fore and hindwings bordered by two dark lines and sharply contrasting.

varuaria L. aberrational forms etc.

ab. alba Prout. Seitz 4 v. 401 1915.
The ground colour almost pure white.

ab. reducta Lempke. Tijdschr. Ent. 95 p. 206 1952.
The black V on the forewings is reduced to a black line because the lower cell fails.

ab. V-remotum Schultz. Int. Ent. 3.25 p. 178 1931. (pl. I f. 13 14 p. 181)
The costal spots moved towards the base so that the V mark is no longer connected with the costal margin.

ab. v-solum Schultz. Int. Ent. 3.25 p. 178 pl. I f. 12 p. 181. 1931.
The three costal spots of the forewing entirely absent, except for some very minute traces.

ab. dealbaria Kolossov. Ent. Nachr. 10 p. 150 1936.
Wings with strong white colouring.

ab. grisearia Heqvist. Ent. Tidskr. 71 p. 41 1950.
Wings with silky-grey ground colour and the dark costal spots red-yellow-brown.

ab. fusca Lempke. (nom. nov. pro fuscaria Thnbg.) Tijdschr. Ent. 95 p. 206 1952.
= fuscaria Thunberg. (primary homonym) Diss. Ins. Suec. (4) p. 58 1792.
Ground colour of the wings dark greyish, markings variable.

ab. v-nigraria Haworth. (Hatchett) Lep. Brit. 1809 p. 282.
Hatchett in Trans. Ent. Soc. 1 p. 244 pl. fig. 3 1812.
The figure shows the wings unicolorous sooty black, hindwings somewhat lighter than forewings, the v mark showing in a deeper black.

ab. lineata Lempke. Tijdschr. Ent. 95 p. 207 1952.
Forewings with three distinct transverse lines.

ab. plana Lempke. Tijdschr. Ent. 95 p. 207 1952.
Forewings without any trace of transverse line or rows of spots.

ab. f-signum Silbernagel. Acta Soc. Ent. Boh. 40 p. 7 1943.

ab. unicolor Lucas. Ent. Ber. (Amst.). 1959. 19. p. 206.
The ground colour darkened, the faint suffusion with [?of?] darker scales almost invisible.
This must be close to ab. fusca Lempke.

ab. marginata Lucas. Ent. Ber. (Amst.). 1959. 19. p. 206.
Along the hind [outer] margin of both fore- and hindwings a broad dark shade.

brunneata Thnbg.

= fulvaria Vill. aberrational forms etc.

ab. uniformis Hoffmann. Mitt. Naturw. Ver. Steiermark 55 p. 79 1919.

Male, without traces of the transverse lines or of the costal spots.

unicinctata Strand.

The median line is strong on both wings but there are no other markings.

ab. atomarioides Nordstrom. Svenska Fjar 1941 p. 301. pl. 44 f. 12 B.

Male, almost as bright in colour as the female and with distinct transverse lines.

ab. unilineata Lempke. Tijdschr. Ent. 95 p. 201 1952.

Only the outer transverse line on the fore and hindwings remains.

ab. fusca Lempke. Tijdschr. Ent. 95 p. 201 1952.

Ground colour of the wings darker than in normal specimens.

ab. flava Hannemann. Int. Ent. Z. XI p. 63 1917.

Female, the ground colour bright or light yellow, the dark markings showing up.

limbaria F. aberrational forms etc.

ab. fumata Mathew. Ent. Rec. 19 p. 11 I 1907.

The orange-yellow is replaced by smoky umber-brown tinged with orange, and dusted with black atoms as on the hindwings and parts of forewings of typical specimens.

ab. postnigrescens Lempke. Tijdschr. Ent. 95 p. 208 1952.

Hindwings unicolorous blackish, the forewings normal.

ab. postclara Lempke. Tijdschr. Ent. 95 p. 208 1952.

Hindwings as clear as the forewings (the type specimen moreover with black central spot)

ab. postdemarginata Lempke. Tijdschr. Ent. 95 p. 208 1952.

Hindwings without the dark marginal band, for the rest normal.

The name delimbaria Stgr. should not be used for English specimens as it is for a French race. Lempke has apparently given the name of demarginata for similar examples occurring as aberrations.

ab. nigrostriata Heydemann. Ent. Z. 52 p. 23 pl. I f. 21-22 1938.

Hindwings with a basal radiation formed by black dusting which travels from the base, over the thick black cellular spot, to the black margin. This black margin shows a radiated widening often increasing to a second streak or radiation along the inner margin. The wings are sprinkled with black atoms.

The figure shows two blackish streaks from base of hindwings to the black margins one in the centre of the wing the other along the inner margin.

ab. quadripunctaria Fuchs. Jahrb. Nassau Ver. Nat. 52 p. 150 1899.

Distinct black discal dots on all wings, those on the forewings a little smaller.

ab. infuscata Thierry-Mieg. Misc. Ent. 23 p. 50 1916.

The yellow parts of the forewings slightly sprinkled with black. Hindwings almost entirely black with a fine dusting of yellow scales. Underside of forewings more strongly dusted with black scales than in the type form, the hindwings normal.

clathrata L. aberrational forms etc.

ab. fasciata Prout. Seitz 4 p. 404 1915.

The median area of both wings darkened into a broad band.

ab. cingularia Hubner. Eur. Schm. Geom. pl. 40 n. 209.

Entirely without markings except the median line, on both wings.

ab. albicans Oberthur. Etudes d'Ent. 20 pl. 6 f. 97 1896.

The figure shows most of the normal markings absent, but the median transverse line is well developed and conspicuous; the ante and postmedian lines are present but very thin and weak. On the margins of both wings there are thin ray like interneural streaks almost reaching the postmedian thin line.

ab. obsoletissima Cockayne. Ent. Rec. 64 p. 241 pl. 10 f. 8 1952.

There are no dark markings, the transverse lines are indicated by a slight darkening of the ground colour, which is pale orange or ochreous.

ab. albissima Cockayne. Ent. Rec. 64 p. 241 1952.

The whole of both fore and hindwings is pure white with no trace of markings; only the nervures are visible.

ab. diluta Cockayne. Entomologist 83 p. 55 pl. 1 f. 12 1950.

Ground colour white; all the normal markings are present, but are very pale buff instead of black.

ab. lacticiliata Cockayne. Ent. Rec. 64 p. 241 1952.

The fringes are the same colour as the ground colour of the wings; the usual chequering is absent.

ab. lativirgata Cockayne. Ent. Rec. 64 p. 242 pl. 10 f. 7 1952.

There is a broad blackish-brown band across the forewing, which includes the first, second and third lines; the subterminal line is very much broader than usual. Hindwings with very broad transverse band and a broad subterminal line like that of the forewing.

ab. aurata Turati. Nat. Sic. 18 p. 45 pl. 9 figs. 5, 8, 9 & 12 1905.

The main feature in the long description is the golden yellow ground colour with a total absence of white throughout, even the fringes being yellow, with the usual black spots.

ab. cancellaria Hubner. Eur. Schm. Geom. pl. 62 f. 322 1800-1809.

The figure shows the ground colour white but the basal half of the forewing and most of the hindwing is golden, or yellowish-orange. The transverse lines are all present but considerably narrowed.

ab. radiata Haworth. Lep. Brit. 1809 p. 348.

All wings white with veins in yellowish scribbles. First distinct squill distributed common waves, not fusing.

ab. retata Haworth. Lep. Brit. 1809 p. 348.

Very similar to radiata, the preceding. Ings. white with three very prominent narrow bands, the first before the middle, the second in the middle, the third beyond the middle but more towards the outer margin.

ab. ornataria Krulikovsky. Rev. Russe Ent. 7 p. 32 1907.

Outer margin of the wings broadly fuscous, the white antemarginal spots almost or completely absent.

ab. alboguttata Fetting. Dobiasch Almanach 1889 p. 43.

= nigricans Oberthur. Etudes d'Ent 20 pl. 6 f. 98. 1896.

= nocturnata Jahrb. Nassau Ver. Nat. 51 p. 207 1898.

= aethiopissa Meves. Ent. Tidskr. 35 p. 128 1914.

Wings sooty black-brown with varying traces of the subterminal whitish spots and with chequered fringes.

ab. chretieni Thierry-Mieg. Le Nat. 32 p. 34 1910.

The ground colour is pure white including the chequered fringes, the markings black and normal. Underside pure white but with very slight traces of yellowish on the outer borders.

ab. aequifasciata Jacquemen. Lamb. 31 p. 22 1931.

The basal transverse line of the forewing is absent giving an equal number of transverse lines on all four wings. The lines are more dense or puffier than usual.

ab. flaveola Stauder. Int. Ent. 2. 14 p. 38 1920.

Very small, less than half normal size with somewhat more delicate lattice-marking and honey-yellow ground colour.

Possibly not an aberration but local race.

ab. wehrlii Stauder. Int. Ent. 2. 14 p. 38 1920.

Ground colour deeper than flaveola, the preceding, but not reaching the colour of the golden-yellow aurata Prti. The latticing is massive, the outer areas of both wings being almost unicolorous black, all the black markings are much more intense than usual.

ab. opipara Dahl. Ent. Tidskr. 51 p. 252 pl. I f. 5 1930.

The figure shows the subterminal line of both wings absent except for a small mark left in the centre, where the normal subterminal often unites with the post-median.

ab. declathrata Dahl. Ent. Tidskr. 51 p. 252 pl. I f. 6 1930.

The median line of fore-wings is completely absent and the corresponding line, the basal, on the hindwings, is also absent.

ab. germanae Le Cerf. Bull. Ass. Nat. Vallée du Loing Forêt. 7 p. 47 fig. 1-24.

All the transverse lines absent.

This is Wehrli's description in Seitz, I have not seen the original.

ab. domarginata Lempke. Tijdschr. Ent. 95 p. 104 1952.

The dark, pale spotted, band along the extreme margin of both wing tails complete - or is very feeble.

ab. reducta Lempke. Tijdschr. Ent. 95 p. 104 1952.

All the transverse lines, except the outermost, fail. There are the fourth on the forewings and the third on the hindwings.

ab. crassesignata Lempke. Tijdschr. Ent. 95 p. 104 1952.

All the transverse lines strikingly thickened, for the rest normal.

subsp. huggisi Daynes. Entomologist 72 p. 20 1959.

The subspecies from Ireland, single-brooded, the English form being double-brooded. Ground colour white, the markings blackish-brown. The general appearance is that of a black and white insect.

Leon. 242 continued.

clacurata L. continu.

ab. antalfvi Bezsilla. Folia. Ant. Hung. 8 n. 68 1941.

rupicaprararia Schiff. discoidal spots etc.

rupicaprararia

ab. pallida Lempke. Tijdschr. Ent. 96 p. 209 1952.

Ground colour of the forewings almost as pale as that of the normal, normal.

primaria

ab. ibicaria Herrich-Schäffer. Syst. Bearb. 1 pl. 23 p. 511 1851.

Ground colour somewhat darker than typical, the only markings well developed are the discoidal spot and the outer transverse line.

The figure shows the hindwings greyish with a white postmedian band but authors do not seem to attach any importance to this.

ab. illataria Fuchs. Jahrb. Nassau Ver. Nat 53 p. 52 1900.

Forewings dark bronze-brown, blackish, the discoidal spot large and sooty, the marginal line indistinct, for the rest without markings.

aescularia Schiff. aberrational forms, etc.

ab. fasciata Lempke. Tijdschr. Ent. 1949. 90. p. 147. (fig'd. vol. 110, pl. 11, f. 6. not type.)
Forewings with the central band darker and contrasting.

ab. tangens Lempke. Tijdschr. Ent. 1949. 90. p. 149. (descript. p. 147.)
The two transverse lines which border the central area of the forewings touch each other below the middle and then separate again.

ab. latefasciata Lempke. Tijdschr. Ent. 1967. 110. p. 226.
Forewings with the central area strikingly enlarged (broadened).

ab. astrigaria Rebel. Verh. zool.-bot. Ges. Wien. 1913. 63. p. (53).
The transverse lines of the forewings are completely absent.

ab. impuncta Lempke. Tijdschr. Ent. 1967. 110. p. 226.
The central dot on the upperside of the forewings is absent, only a small line on the transverse nervure remains.

ab. diluta Lempke. Tijdschr. Ent. 1967. 110. p. 226.
Forewings light grey, markings weak.
This is the translation of Lempke's Dutch description; his English translation, following the Dutch, says: "...markings obsolete." This would appear to be an error in translation, but the original Dutch description must be accepted.

ab. albina Lucas. Cat. Lep. Ouest. France. 1912. p. 191.
The ground colour whitish. The dark dusting is almost completely absent, the transverse lines clearly visible.

ab. brunnea Hannemann. Int. Ent. Z. 1917. 11. p. 58. (fig'd. Suppl. Ent. 6, colour pl. f. 21.)
The wings darkened, blackish-brown.
The figure shows the transverse lines of normal colour on a dark brown ground.

ab. nigrescens Lempke. Tijdschr. Ent. 1967. 110. p. 226, pl. 11, f. 4.
Forewings black-grey to blackish, the markings normal. A modern dark form, but already widely distributed in Holland.
The black and white figure shows the forewings dark, the transverse lines slightly darker, but still more or less retaining their light edging, and the hindwings normal.

leucophaearia Schiff. aberrational forms etc.

ab. nigricaria Hubner. Eur. Schmett. Geom. pl. 35 f. I 81 I 796-99.

The figure shows the basal and wide margin of the forewings blackish, almost black, leaving the median area between the two transverse lines whitish, dusted with dark scales; a pale subterminal chain of spots is present before the margin.

ab. marmorinaria Esner. Schmett. in Abb. 5 p. 205 pl. 37 f. I 1802.

Base of forewings reddish-fuscous bordered by a black line, from this to beyond middle of wing is a broad yellow band also bordered with black and which towards the margin is bulging and angulated. This yellow band has in the middle of the costal margin a blackish spot which is drawn out into a fine line which divides the band. From the outer border of the band to the margin the colour is dull violet-brown mixed with dark yellowish spots; towards the outer margin is a black-edged yellow line, the extreme margins being however dull violet-brown, the yellow band is interrupted by blackish.

This form is not so black and white as the preceding nigricaria and the middle shadow is very definite in the figure so the two forms are kept separate.

ab. brunneomarmorata Lempke. Tijdschr. Ent. 95 p. 212 1952.

The basal and outer areas of the forewings pale brown to brown, the transverse lines darker, the central area pale.

ab. fuscomarmorata Lempke. Tijdschr. Ent. 95 p. 212 1952.

The basal and outer areas of the forewings dark brown to black-brown, the central area pale.

ab. rufomarmorata Lempke. Tijdschr. Ent. 95 p. 212 1952.

The basal and outer areas red-brown, the central area pale.

ab. intermedia Lempke. Tijdschr. Ent. 95 p. 212 1952.

The basal and outer areas of the forewings dark-grey to dark brown-grey, the central area pale.

ab. effusa Lempke. Tijdschr. Ent. 95 p. 212 1952.

The pale central area of the forewings is not sharply separated from the two dark neighbouring areas, the two transverse lines evidently fail.

ab. desparsata Heydemann. Ent. Z. 51 p. 394 1938. (fig. vol. 52 pl. I f. 10.)

All wings ivory white without brownish-grey sprinkling, the transverse lines blackish and sharply marked.

ab. destrigaria Heydemann. Ent. Z. 51 p. 394 1938. (fig. vol. 52 pl. I f. 14-15.)

The transverse lines of the median area of the forewing are completely lost in a strong sprinkling of dark scales which cover the whole wing.

The figure shows two specimens with the normal pattern almost completely lost by this covering, though the ground colour remains whitish.

ab. confusaria Preissecker. Verh. zool.-bot. Ges. Wien 72 n. (94) 1923.

The two transverse lines of the forewing flow together and towards the inner margin separate again.

ab. trilinearia Sibille. Rev. Mens. Soc. Ent. Nam. 5 p. 19 1905.

Between the two transverse lines of the forewings a distinct middle shadow as prominent as the lines themselves. The 3 lines are black & well marked, not merely blackish as is usual

ab. medioobscuraria Uffeln. Ent. Z. 19 p. 13 1905.

The basal field not darkened, outer marginal area only to undulate line; middle field however is blackish, especially between middle shadow and 2nd. transverse line

ab. seminigraria Uffeln. Jahresber. Westfal. Prov. -ver. f. Wiss. u. Kunst 51-52 p. 172
Basal field darkened to about the middle of forewing, outer marginal half normal.
Hindwings with a sharp dark band which borders the basal field.

ab. merularia Heymer. Jahresber. Naturw. Ver. Elberfeld 5 p. 94 1878.
Forewings unicolorous brown-black, usually with only traces of the transverse lines.

ab. funebraria Thierry-Mieg. Le Nat. 6 p. 437 1884.
Forewings entirely black with the transverse lines little distinguished.

ab. fuscata Haverkamp. Ann. Soc. Ent. Belg. 50 p. 158 1906.
Similar to *merularia* Heym. but brown instead of black.

ab. subrufaria Uffeln. Jahresber. Westfal. Prov. Ver. f. Wiss. u. Kunst 42 p. 73 1914.
Forewings unicolorous reddish-brown.

ab. ebenica Delahaye. Bull. Soc. Ent. Fr. 1896 p. 156.
Forewings with black band along the costa widening into an oval and some longitudinal reddish marks.
This description is from Prout in Seitz, I have not seen the original.

ab. griseus Lempke. Tijdschr. Ent. 95 p. 213 1952.
Forewings unicolorously dark grey to black-grey, as a rule with distinct transverse lines.

ab. brunescens Lempke. Tijdschr. Ent. 95 p. 213 1952.
Forewings unicolorously brown-grey to pale brown with distinct transverse lines.

ab. pallidalinea Lempke. Tijdschr. Ent. 95 p. 212 1952.
Ground colour of the forewings dark (blackish in the type), the basal area bordered by a narrow pale band, in the outer area a complete pale submarginal line.

ab. flavescens Lempke. Tijdschr. Ent. 95 p. 211 1952.
Ground colour of the wings yellowish, for the rest belonging to the typical not darkened group.

ab. uniformata Lempke. Tijdschr. Ent. 95 p. 211 1952.
Ground colour of the forewings uniform pale grey with only the sharply contrasting black transverse lines so similar to *desparsata* Heyd. but grey instead of white.

ab. uniformata-obsoleta Lempke. Tijdschr. Ent. 95 p. 211. 1952.
As the preceding *uniformata* but with the transverse lines obsolete.

ab. brunneo-albata Lempke. Tijdschr. Ent. 95 p. 211 1952.
The ground colour white as in *desparsata* Heyd. and very similar except that the transverse lines are brown instead of black, there are no cloudy markings or dark specks.

ab. obsoleta Lempke. Tijdschr. Ent. 95 p. 210 1952.
The transverse lines very feeble or even completely absent with normal pale ground colour, the other brown markings also much paler.

ab. bruneostrigata Lempke. Tijdschr. Ent. 95 p. 210 1952.
Forewings with brown instead of black transverse lines, the cloudy markings also often a little browner.



Geom. 245. continued.
p. 3.

leucophaearia schiffi.

ab. crassestrigata Lemke. Tijdschr. Ent. 95 n. 210 1952.
Forewings with strikingly thick black transverse lines.

aurantiaria Hbn. aberrational forms etc.

ab. fumipennaria Hellweger. Ent. Z. 20 n. 210 1906.

= fusca Porritt. Ent. Mon. Mag. 48 p. 90 1912.

Ground colour uniform smoke-brown or dirty violet-brown, the cilia and small spot at the base of the forewings yellow. Hindwings dark dusted, the markings visible.

ab. obscura Burmann. Z. Wien Ent. Ges. 29 n. 36 1944.

All wings above and below, silky gleaming blackish-brown, without any admixture of yellow. The base of the forewing is dark, not yellow as in the preceding form. Thorax, body and legs uniformly blackish-brown or chequered rather dark. Hindwings slightly paler. Only the fringes remain yellow and contrast wonderfully.

ab. brunnea Burmann. Z. Wien Ent. Ges. 29 n. 36 1944.

Uniform reddish-brown on all wings above and below, without any yellow scaling at all, but all the normal markings still visible. Fringes, body, thorax and legs all uniform reddish-brown.

ab. marmoraria Scholz. Z. Wien Ent. Ges. 31 p. 119 Pl. II f. 17 1947.

All wings equally sprinkled with yellow and violet-brown scales, thus the strong dusting becomes so prominent that the markings are no longer visible.

ab. polli Scholz. Z. Wien Ent. Ges. 31 p. 119 pl. II f. 14-15 1947.

Forewing dusted with violet or dark brown as in fumipennaria Hellw., but either in the middle area, or the marginal area, or both, spaces which are still light remain.

ab. weileri Scholz. Z. Wien Ent. Ges. 31 p. 119 pl. II f. 16 1947.

Forewing as in fumipennaria Hellw., completely darkened, but the hindwing normal yellow with dark markings.

ab. bellaria Scholz. Z. Wien Ent. Ges. 31 p. 119 pl. II f. 11 1947.

The middle transverse line of the forewing outwardly broadly darkened in a shadowy manner. Hindwing also with a broad dark band of similar breadth. Marginal and basal areas normal.

ab. fasciaria Linstow. Ent. Z. 21 n. 102 1907.

Between the outer (postmedian) transverse line and the weakly indicated wavy line (subterminal) there is a broad yellowish-grey band so that it is reminiscent of E. marginaria.

ab. interlucens Kolar. Z. Wien Ent. Ges. 28 n. 168 1943.

= . oenibontana Scholz. Z. Wien Ent. Ges. 31 p. 118 pl. II f. 10 1947.

The middle area in the darkened forewing stands out paler, the markings in the darker area still showing through.

ab. venosaria Galvagni. Z. Wien Ent. Ges. 32 n. 103 pl. I fig. 1948.

Ground colour straw-yellow with dense fire-orange dusted veins on the forewings. The first transverse line is entirely suffused, the second and third outer lines violet-brown and well developed, the latter continues on the hindwings. All the dark marginal spots absent and all marginal points, fringes yellow, hindwings with a distinct discoidal spot.

ab. demacularia Scholz. Z. Wien Ent. Ges. 31 p. 118 pl. II f. 7 1947.

The row of spots in the marginal area of the forewings is completely absent but all transverse lines and discoidal spot are very prominent.

ab. maculata Nordstrom. Svenska Fjarilar 1941 n. 503 pl. 42 f. 17B.

(P. 2 cont.)

ab. maculata Nordstrom. Svenska Fjarilar 1941 n. 303 pl. 42 f. I/B.
= *luxuriaria* Scholz. Z. Wien Ent. Ges. 31 n. 118 pl. II f. 8 1947.

In the marginal area of the forewing is a continuous row of large dark spots.

ab. nigrofasciaria Scholz. Z. Wien Ent. Ges. 31 n. 118 pl. II f. 9 1947.

In the marginal area of the forewing is a row of spots fused into a broad dark band.

ab. reductaria Scholz. Z. Wien Ent. Ges. 31 n. 118 pl. II f. 6 1947.

Markings of both wings strongly reduced. Of the outer transverse line of the forewing only little disconnected pieces remain, the remaining transverse line of both wings completely absent.

ab. elliparia Scholz. Z. Wien Ent. Ges. 31 n. 119 pl. II f. 1 1947.

The outer transverse line of the forewing divides in its upper part and goes up again on the costa, forming an ellipse and enclosing a little discal spot.

ab. confluentia Scholz. Z. Wien Ent. Ges. 31 n. 119 pl. II f. 10 1947.

Both of the inner (basal) transverse lines of the forewings are so strongly approximated that they almost or quite touch. Both are displaced very near to the base.

ab. tristrigaria Hbn. Z. Ent. Ver. 6 p. 49 1901.

The forewings have an extra basal transverse stripe making three instead of the usual two. Hindwings have a continuation of the basal stripe of the forewing.

ab. margineobscuraria Scholz. Z. Wien Ent. Ges. 31 n. 115 pl. II f. 14 1947.

The costa of the forewing darkened from the base to the tip of the wing. A band 2-3 mm. in width. Forewing otherwise somewhat dusted, the markings normal.

ab. grisearia Scholz. Z. Wien Ent. Ges. 31 n. 115 pl. II f. 15 1947.

All wings uniform pale mouse-gray, strikingly thick scaled and thus somewhat translucent. Without markings including the discoidal spot.

ab. underaria Scholz. Z. Wien Ent. Ges. 31 n. 115 pl. II f. 16 1947.

All the markings, the three transverse lines on the forewings and the two on hindwings and the discoidal spots, particularly strongly darkened and prominent in spite of the light dusting of the rest of the wings.

ab. alvincta Badtnermann. Soc. Ent. 44 p. 3 1929.

The colour of *P. luteolata*, a beautiful yellowish-green, markings almost normal.

ab. nigra Scholz. Z. Wien Ent. Ges. 31 n. 113 1947.

Female form, completely blackened and thus markingless.

ab. pallida Lempke. Tijdschr. Ent. 95 n. 214 1952.

The ground colour pale yellow, markings as a rule paler, more grayish.

ab. unistrigaria Lempke. Tijdschr. Ent. 95 n. 215 1952.

Only the postdiscal line on the forewings is present.

Geom. 246 continued,
p. 3.

Aurantia 701. continued.

ao. marginemaculata Schneider. Polsk. Pismo Ent. I. 225

marginaria F. aberrational forms etc.
= progemma Hbn.

ab. bicolor Lempke. Tijdschr. Ent. 95 p. 215 1952.

The whole area between the postdiscal line and the outer margin is brown, darker contrasting with the pale basal area of the forewings.

ab. signata Lempke. Tijdschr. Ent. 95 p. 215 1952.

Forewings with strikingly thick central shade, the other transverse lines also sharp.

ab. destrigaria Lempke. Tijdschr. Ent. 95 p. 216 1952.

All the transverse lines fail.

ab. unistrigaria Uffelmann. Z. Wiss. Ins. Biol. 10 p. 72 1914.

Of the three normal transverse stripes of the forewing only the postdiscal remains.

ab. quadristrigaria Lempke. Tijdschr. Ent. 95 p. 216 1952.

Before the pale subterminal line on the forewings, a distinct dark fourth line appears similar to the other transverse lines.

ab. diversaria F. Ent. Syst. 3 (2) p. 157 1794.

Uniform reddish-brown without transverse lines.

ab. fuscata Harrison. Entomologist 17 p. III 1884.

The colour of the forewings is uniformly dark soot or smoke colour, the hindwings a shade lighter, the usual transverse lines and dots are altogether invisible, with the exception of the one across the hindwings. The body is black and so differs from other dark forms.

ab. rufipennaria Fuchs. Jahrb. Nassau Ver. Nat. 52 p. 146 1899.

Forewings deep rust-red, finely dusted with blackish, with two or three dark transverse lines, the inner often indistinct, the large discoidal spot of the forewings is blurred through the dark dusting.

See page 2 for this form.

ab. infumata Fuchs. Jahrb. Nassau Ver. Nat. 52 p. 156 1899.

The basal and middle areas of the forewing strongly darkened by brown-smoking, not unicolorous rust red as in rufipennaria, the preceding. In the male the strength of the smokiness is unequal in individual specimens, in extreme cases it extends over the whole wing when it becomes ab. uniformata Fuchs the following form.

ab. uniformata Fuchs. Jahrb. Nassau Ver. Nat. 52 p. 157 1899.

The forewings uniformly smoked over the whole of their surface so that the markings disappear and the wings become uniform blackish-brown.

ab. lesaunieri Mabille. Bull. Soc. Ent. Fr. 1916 p. 141.

Female. Completely black with a few scales of a deeper black. Underside slightly rufous with black terminal line quite close to the fringe. Body, legs and antennae black.

ab. curvilineata Cockayne. Ent. Rec. 64 p. 242 pl. 10 f. 6 1952.

Forewings with basal line present but the antemedian absent; the postmedian runs obliquely inwards as far as nervure 2 and then curves sharply outwards to the inner margin. Hindwings with the transverse band unusually distinct. The alteration in the direction of the postmedian line alters the whole appearance of the insect.

ab. pallidata Turati, Z. Wiss. Ins. Biol. 7 p. 211 1911.

Wings pale whitish, similar in appearance to the figure in Williere Icon. 1.7. fig. I which is an aberration of *E. ankeraria* Stgr.

ab. albescens Lemke. Tijdschr. Ent. 95 6.216 1952.

Female. The ground colour of the wings whitish.

ab. infumata Fuchs. Jahrb. Nassau Ver. Nat. 52 p. 156 1899.

= ♂ *denigraria* Uffeln. Ent. Z. 19 v. 18 1905.

= ♀ *denigraria* Uffeln. Ent. Z. 19 n. 14 1905.

= ♀ contrasta Lempke. Tijdschr. Ent. 95 n. 216 1952.

The description of the male of *denigraria* Uffeln is so similar to the *ab. infumata* that it can be regarded as synonymous. Dark dusted in the whole basal area up to the middle shade and in the marginal area almost to the outer margin, so densely that these portions of wing appear completely blackened. In some specimens the space between the middle shade and the outer transverse stripe is also blackened. From this darkened area the median vein and the wavy subterminal line remain pale, the latter in the form of a row of small pale separate spots.

defoliaria Clerck. aberrational forms etc.

ab. fuscognata Heinrich. Dtsch. Ent. Z. (1916) p. 530. 1917
The bands of the forewings black-brown instead of red-brown.

ab. trifasciata Schawerda. Verh. zool.-bot. Ges. Wien 64 p. 371 1914.
Forewings with three brown transverse stripes or bands, the extra one situated between the ante and postmedian and running through the discoidal spot.

ab. eutaeniaria Schawerda. Verh. zool.-bot. Ges. Wien 66 p. 244 1916.
Hindwings with a dark middle band on upper and underside.

ab. holmgreni Lampa. Ent. Tidskr. 6 p. 97 1885. (fig. Svenska Fjar. pl. 42 f. 19D type!.)
Forewings without transverse bands, with dark spots near the outer margin.
The fig. shows the ground colour yellowish. Practically all authors misidentify it.

ab. suffusa Cockerell. Entomologist 19 p. 37 1886. (Newman Brit. Moths p. 105 fig.)
= ~~punctata Gornik. Z. Ost. Ent. Ver. 17 p. 6 1932.~~
Uniform reddish-brown, freckled all over with minute dots, a tiny discoidal spot on the forewings is showing in Newman's figure.

ab. obscurata Staudinger. Cat. Ed. 3 p. 334 1901.
Much darker than typical form. Forewings dirty brown, usually almost markingless. Very similar to the preceding and hardly worth separating as the reddish forms run into the brown and darker brown ones.

ab. brunnescens Rebel. Berge's Schmett. 1910 p. 397.
Almost completely unicolorous reddish-ochre-brown, thickly dusted, with distinct transverse stripes and discoidal spot and unicolorous fringes.

ab. destrigata Gornik. Z. Ost. Ent. Ver. 17 p. 5 1932.
Forewings lighter or darker reddish-ochre-brown and more or less dusted. However, the distinct blackish-brown lines fail though the remaining markings are present. This means the unequally broad dark brown shading that touches the outer transverse line and the anterior one, the middle area is thus somewhat pale. Discoidal spot on both wings distinct. Hindwings finely dusted with brown.

ab. punctata Gornik. Z. Ost. Ent. Ver. 17 p. 6 1932.
The description reads "Like holmgreni but the discoidal spots on fore and hind wings distinct." However, Gornik and many other authors have a completely wrong impression over holmgreni assuming that it has no discoidal spots and that it is the dark brownish speckled form in which the discoidals do not show up, so his punctata is in reality a reddish-brown or brown speckled form in which a prominent discoidal spot appears on all wings. Lempke in Tijdschr. Ent. 95 p. 213 makes it a synonym of suffusa Cockerell but the figure in Newman's Brit Moths on which suffusa was based, only shows a tiny discoidal on forewings and none on the hindwings.

ab. progressiva Haverkamp. Ann. Soc. Ent. Belg. 50 p. 159 1906.
= intermedia Meves. Ent. Tidskr. 35 p. 126 1914.
Transitional between the normal form and darker form "holmgreni" but on the forewings there are distinct black transverse stripes and discoidal spots. This is Meves description of intermedia, he, like many other authors, assuming holmgreni to be the dark brown markingless form.
progressiva, which has priority, is the colour of the brown obscurata Stgr. with dark, even absolutely black bands.

ab. obscurata-fasciata Lempke. Tijdschr. Ent. 95 p. 218 1952.
Ground colour of the forewings dark brownish with distinct darker brown bands. Extremely similar to brunnescens Rebel and hardly worth separating.

ab. obscura Helfer. Ent. Z. 9 p. 188 1896.

= nigrofasciata Neuburger. Soc. Ent. 21 p. 153 1907.

= viduaria Meves. Ent. Tidskr. 35 p. 126 1914.

The two bands of the forewings greyish-black with more or less normal ground colour, the bands standing out in striking contrast.

ab. albescens Schawerda. Verh. zool.-bot. Ges. Wien 64 p. 371 1914.

Strongly whitish-yellow, hardly powdered showing only remnants of the two brownish transverse bands.

ab. transitoria Lempke. Tijdschr. Ent. 95 p. 218 1952.

Forewings unicolorously pale brown, as a rule only with traces of the two transverse lines.

ab. variegata Lempke. Tijdschr. Ent. 95 p. 217 1952.

The brown band outwards of the postdiscal line runs to the outer margin, but is as a rule, divided by the subterminal line.

ab. deumbrata Lempke. Tijdschr. Ent. 95 p. 217 1952.

The brown band outwards of the postdiscal line fails almost completely, for the rest normal.

ab. depuncta Lempke. Tijdschr. Ent. 95 p. 217 1952.

The central or discoidal spot of the forewings fails, for the rest normal.

ab. unistrigata Lempke. Tijdschr. Ent. 95 p. 219 1952.

The basal line of the forewings (and in banded specimens also the band before it) fails, but the other markings are present.

ab. pallidaria Cockayne. Ent. Rec. 54 p. 34 1942.

Markings as in the dark banded form obscura Helfer, but the basal area and the bands are very pale and show a varying mixture of pale bluish-grey and pale reddish-brown. The freckles are reduced in number and almost invisible without a lens owing to their pale colour.

ab. praeclara Richardson. Ent. Rec. 64 p. 269 pl. II f. 4 1952.

The ground colour of the forewings bright orange-brown. Upper third of the dark subterminal band obsolete.

ab. tangens Cockayne. Ent. Rec. 54 p. 34 1942.

The pale median area is broken by a union between the ante and postmedian bands midway between nervures 1 and 2.

ab. nigra Bandermann. Int. Ent. Z. 21 p. 372 1928.

Completely black without any markings, almost identical with B. betularia ab. carbonaria Jord.

ab. invariabilis Warnecke. Flora og Fauna 57 p. 43

pedaria F.
 = pilosaria Schiff. aberrational forms etc.

ab. extinctaria Standfuss. Stett. Ent. Z. 8 p. 62 1847.

= destrigaria Lempke. Tijdschr. Ent. 95 p. 220 1952.

Forewings with four costal spots continued as three obscure interrupted stripes, the fourth, on the outer margin, being obsolete
 Lempke described his form showing no, or only feeble traces of, the dark transverse lines of the forewing.

ab. uniformata Lempke. Tijdschr. Ent. 95 p. 220 1952.

Wings uniformly greenish brown-grey, not darkened, without the white specks.

ab. ochrea Schawerda.. Z. Ost. Ent. Ver. 4 p. 68 1919.

Wings ochreous yellow.

ab. fasciaria Richardson. Ent. Rec. 64 p. 269 pl. II f. 6 1952.

The space between the second and third lines of the forewings is filled in to form a broad median band.

♀ ab. subnigraria Uffeln. Jahresber. Westf. Prov. Ver. f. Wiss. u. Kunst. 42 p. 77 1914.

= ♀ melanaria Bretschneider. Ent. Z. 53 p. 60 1939.

Upperside deep black, only on the back of the abdomen is a fine white line more or less visible which at the anus ends in a short brush. Only at the base of the wings dark olive-brown remains.

ab. obscurata Schawerda. Z. Ost. Ent. Ver. 4 p. 68 1919.

Dark olive-brown, the forewings especially darkened. The markings normal.

ab. monacharia Staudinger. Cat. Ed. 3 p. 335 1901.

All wings unicolorous blackish.

ab. submarginalis Cockayne. Ent. Rec. 65 p. 241 pl. I3 f. I6 1953.

On forewings the second line is absent, but the subterminal dark line is broader and more distinct than usual; on the hindwing the transverse line is reduced to a few dark scales, but the subterminal line is thick and unusually distinct.

ab. tangens Lempke. Tijdschr. Ent. 95 p. 220 1952. (descript. vol. 90 p. 147)

The two transverse lines of the forewing touch each other below the middle and then separate again.

hispidaria Schiff. aberrational forms etc.

ab.fusca Lempke. Tijdschr.Ent. 95 p.221. 1952.

Ground colour of the forewings black-brown, the transverse lines distinct.
The form is not identical with ab.obscura Khn. which is unicolorous blackish.

ab.obscura Kuhne. Ent.Z. 21 p.79 fig. Ia, Ib. 1907.

Forewing deep brownish-black, the transverse band completely hidden, somewhat lighter towards the outer margin. Hindwing greyish-brown, the transverse line only indicated by a faint tracing of black bordered on its outer side by a light grey band.

ab.cottei Oberth. Lep.Comp. 7 p.245 pl.162 f.1582 1913.

Ground colour bright silvery grey with vivid black shadows without a trace of ochreous or brown. ~~Wings~~ ^{Frings} chequered with grey and black.
The figure shows the outer margins of the forewings extremely pale, almost whitish but this is not stressed or even mentioned in the description.

ab.albomarginata Lempke. Tijdschr.Ent. 95 p.221 1952.

Marginal area of the forewings whitish, sharply contrasting.

lapponaria Dup. aberrational forms etc.
subsp. scotiae Wehrli. Seitz 4 Suppl. p. 420 1941. 1.34 v. 10
Specimens from Scotland.

ab. lutea Cockayne. Entomologist 42 p. 169 1909.

The orange on the costa and orange abdominal stripe replaced by yellow.

ab. fasciata Harrison. Ent. Rec. 52 p. 34 1940.

The first or basal line is strengthened and extended, whilst similarly the median and second lines are fused to form a solid black bar. Except for a faint darker terminal suffusion the outer half of the wings appears of a uniform warm ochreous. Hindwings with the usual markings and suffusions obsolete except the central band which is fainter than that on the forewings.

hybrid smallmani Harrison. Entomologist 43 p. 197 1910.

Cross between Lapponaria ♂ and zonaria ♀.

hybrid leesi Harrison. Entomologist 71 p. 124 1938.

Cross between lapponaria ♂ and hirtaria ♀.

zonaria Schiff. aberrational forms etc.

subsp. britannica Harrison. Entomologist 45 p. 316 1912.

The subspecies from Britain according to Harrison is greyer marked, tending to obsolescence, inward from the praesubterminal suffusion.

ab. obscura Harrison. Entomologist 45 p. 316 1912.

Almost totally suffused with smoky-black.

subsp. atlantica Harrison. Ent. Rec. 52 p. 34 1940.

The race from the Inner and Outer Hebrides. Much smaller than other British specimens.

ab. obsolescens Cockayne. Ent. Rec. 65 p. 241 pl. I3 f. 9 1953.

All the dark markings on the wings and thorax are replaced by very pale brownish grey.

ab. albicans Nitsche. Verh. zool.-bot. Ges. Wien 74-75 p. (178) 1926.

The basal and middle field almost completely white, the dark transverse lines in the middle field of both wings almost completely disappear.

ab. ochracea Newstead & Smith. Entomologist 52 p. 227 1919.

The ground colour yellowish-buff instead of the normal whitish-grey.

♀ ab. nigra Harrison. Entomologist 45 p. 320 1912.

Completely black.

There is no proof that this is the female of obscura Harrison as the latter is from Britain and nigra from Russia.

hybrid merana Burrows. Ent. Rec. 18 p. 132 1906.

Cross between zonaria ♂ and lapponaria ♀.

hybrid harrisoni Harrison. Entomologist 43 p. 197 1910.

Cross between zonaria ♂ and hirtaria ♀.

hirtaria Clerck. aberrational forms etc.

ab. *flavescens* Prout. Seitz 4 p. 356 1915. (nom. preoc. Kitt. 1914)
The wings more mixed with yellow, a common form in England.

ab. *albescens* Lempke. Tijdschr. Ent. 95 p. 223 1952.

Forewings whitish, feebly powdered with dark atoms, the three transverse lines rather feebly developed, the subterminal hardly visible.

ab. *fumaria* Haworth. Lep. Brit. 1809 p. 273.

Wings fuscous or blackish-grey with four obscure transverse lines.

Prout and other authors are wrong in giving this name to the black aberration which is now named *nigra* Cockayne.

ab. *hanoviensis* Heymons. Berl. Ent. Z. 36 p. 446 pl. 15 f. 9-9 A. 1891.

The figure of the male shows the middle shadow-line only extremely faintly indicated. The twin basal lines, further apart, are filled with fuscous to form a distinct band. Outwards from this is a band of normal yellowish ground colour in which the discoidal spot is centred, followed by another band of fuscous, then the pale subterminal and fuscous margin. The impression is a wing with three fuscous bands, the first two almost meeting on the inner margin instead of there being the normal wide space between them. The figure of the female shows the markings more or less obsolescent.

♀ ab. *terroraria* Krulikowsky. Soc. Ent. 23 p. 12 1908.

Female with the wings unicolorously grey with weak traces of the transverse lines on the veins of the forewings.

ab. *variegata* Lempke. Tijdschr. Ent. 95 p. 223 1952.

On the forewings the area between the postdiscal and subterminal lines is unicolorously blackish, the outer area is also often strongly powdered with black so that the subterminal line contrasts as a sharp pale line.

ab. *denigrata* Hawkins. Entomologist 73 p. 28 1940.

All black scaling on wings, head, thorax, abdomen, antennae and legs is completely absent. The normal pattern is present but is only shown by a darker shade of the ground colour.

ab. *flavescens* Kitt. Verh. zool.-bot. Ges. Wien 64 p. (177) 1914.

Entirely rusty yellow with the black markings reduced to black-grey lines instead of bands. Fringes rusty-yellow, not chequered, antennae also rusty-yellow.

ab. *nigra* Cockayne. Ent. Mon. Mag. 84 p. 266 pl. E f. 8 1948.

The whole insect including the antennae, legs, thorax, abdomen and wings is black with the exception of the subterminal line, which is whitish in the male, less distinct and sometimes obsolescent in the female, none of the normal markings are visible.

ab. *fasciata* Prout. Seitz. 4 p. 356 1915.

Forewing with a blackish band extending from the median line to the subterminal and with the antemedian line double.

ab. *congeneraria* Hubner. Eur. Schmett. Geom. 33 f. 174 1796-99.

= *duplicaria* Staudinger. Cat. Ed. III p. 336 1901.

The figure shows the basal line double and the postmedian band split up into lines and not filled in with fuscous as is normal.

Geom. 253 continued.
p. 2.

hirtaria Clerck. continued.

hybrid denhami Harrison. Entomologist 43 p. 197 1910.
Cross between hirtaria ♂ and zonaria ♀.

hybrid wallacei Harrison. Entomologist 49 p. 77 1916.
Cross between hirtaria ♂ and lapponaria ♀.

strataria Hufn. aberrational forms etc.

ab. meridionalis Oberthur. Lep. Comp. 7 p. 251 pl. I63 f. I59I I9I3.

The white ground is very little dusted with dark and the two bands of the forewin are extremely pale, and of a light brown.

ab. ochrearia Newstead & Smith. Entomologist 52 p. 226 I9I9.

Ground colour yellowish-buff instead of white, the markings normal. Head and collar deep tawny-buff, the normal white parts on thorax, legs and antennae are also buff.

ab. umbrata Lempke. Tijdschr. Ent. 95 p. 224 I952.

The pale central band of the forewings divided over its whole length by a dark central shade.

ab. approximata Lempke. Tijdschr. Ent. 95 p. 224 I952. (description vol. 90 p. I47)

The two transverse lines which border the central area of the forewing are close together.

ab. conjunctarius Galvagni. Verh. zool.-bot. Ges. Wien 8I p. (I6) I93I.

The two transverse lines of the forewing are very near to each other just above the inner margin and are joined at this point by a thick black streak.

ab. cotangens Lempke. Tijdschr. Ent. 95 p. 224 I952. (descript. vol. 90 p. I47)

The two transverse lines which border the central area of the forewings, touch each other below the middle and remain united.

ab. obsoleta Lempke. Tijdschr. Ent. 95 p. 224 I952.

The two transverse lines of the forewings, as well as the two brown bands, are very feebly developed, the ground colour normal.

ab. intermedia Lempke. Tijdschr. Ent. 95 p. 224 I952.

The whole central area brown, but for the rest normal. So the two transverse lines are outwardly bordered with brown, but the basal and marginal areas remain white.

ab. nigricans Oberthur. Lep. Comp. 7 p. 25I p. I63 f. I592 I9I3.

The brown transverse bands of the forewings rather dark and the white central area heavily speckled and dusted with black so as to almost obliterate the white ground. Hindwings also darkened.

ab. berus Horhammer. Int. Ent. Z. 27 p. 295 I933. (Pl. ? fig. 7)

The normally brown bands of the forewing are deep black, only a trace of the normal brown remaining as a very fine line running from the inner margin parallel to the ante and postmedian lines. Hindwings also blacker than normal.

ab. striaria Prochaska. Verh. zool.-bot. Ges. Wien 69 p. (I37) fig. 4 I9I9.

The black dusting in the middle field of the forewings is absent, the ground colour uniform reddish-grey. Both black transverse stripes are very distinct, they appear like black-brown bands. Head, thorax and abdomen reddish-grey. The figure shows the two transverse stripes narrow with apparently no outside brown bordering, standing out as blackish bands, not as the single lines which are seen in the normal form.

ab. permutaria Schepp. Ent. Z. 38 p. 46 I924.

♂ The forewings with black-brown bands. These blackish bands are even more distinct than in the typical female whilst the middle field is sprinkled to a lesser degree with dark scales.

ab. terrarius Weymer. Jahresber. Naturw. Ver. Elberfeld p. 73. 1884.
= octodurensis Favre. Mitt. Schweiz. Ent. Ges. 1897: 10. p. 36.
= breigneti Brascassat.

The white areas suffused with yellow-grey, the brown bands hardly contrasting but the black transverse lines distinct.

ab. robinaria Frings. Soc. Ent. 13 p. 81 1898.

Almost unicolorous black-brown. There is no lighter area at the base of the forewing nor in the middle area or margin, the brown colour of the bands is almost entirely lost in the black-brown ground colour, only the black uneven lines which border the bands are still visible.

This form is much darker than the preceding.

ab. melanaria Koch. Ent. Z. 59 p. 137 1949.

Deep black, the colour exactly as in ab. carbonaria Jord. of betularia. Whilst in carbonaria there is nearly always a grey or whitish patch at the ante-margin of the hindwing, this is absent in the black strataria. It is entirely without markings.

hybrid herefordi Tutt. Ent. Rec. 2 p. 83 1891.
Cross between strataria ♂ and betularia ♀.

ab. grisearia Naufock. Jahresber. Wien. Ent. Ver. 25 p. 83 (1914) 1915.

Much lighter than in ab. terrarius but in common with it there is a complete absence of the normal dark violet-brown bands and the brownish shade of the forewings, and therefore the whole wing has a light grey ground colour. The black scaling is much lighter than in terrarius and the pattern consists of very fine black transverse lines which are shaded with light ochre-brown instead of dark violet-brown of the typical form so that the whole median field appears somewhat lighter.

betularia L. aberrational forms etc.

ab. benesignata Lempke. Tijdschr. Ent. 95 p. 226 1952.

Typically coloured specimens with complete sharp transverse lines, the outer one of which is not broken near the cell of the forewings.

ab. destrigata Lempke. Tijdschr. Ent. 95 p. 226 1952.

Typically coloured but with no trace of the transverse lines.

ab. ochrearia Mansbridge. Entomologist 41 p. 112 1908.

The wings ochreous with typical black markings, hindwings somewhat paler, especially on costa. Forewings with the costa brownish-ochreous; thorax and abdomen pale ochreous mixed with black, antennae pale ochreous banded with black.

ab. fasciata Prout. Seitz 4 p. 358 1915.

A grey median band crossing both wings.

ab. insularia Thierry-Mieg. Le Nat. 8 p. 237 1886.

The white ground colour heavily mottled and dotted with black.

ab. nigromarginata Lempke. Tijdschr. Ent. 95 p. 226 1952.

Both wings with broad black outer border, the rest of the wings thickly sprinkled with black as in insularia.

69

ab. carbonaria Jordan. Ent. Mon. Mag. 6 p. 40 1896.

= doubledayaria Milliere. Ann. Soc. Linn. Lyon 16 1870.

= nigra Heylaerts. Tijdschr. Ent. 13 p. 155 1870.

Unicolorous black with a white spot at the base of the forewing and a small whitish area on the costa of the hindwings.

ab. funebraria Lambillion. Rev. Mens. Soc. Ent. Nam. 5 p. 15 1905.

Forewing black as in carbonaria. Hindwings black with a broad pure white band along costal margin which is traversed by two ^{median} dark lines. (This white area is free from the small black spots which are usually present.)

ab. parvula Wnukowsky. Folia Zool. et Hydrobiol. 7 p. 227 1935.

Dwarf form

ab. grisea Smith. Ent. Rec. 66 p. 97 pl. 3 f. 2 1954.

Similar to carbonaria but of a washed out grey shade, the forewings dark grey, hindwings grey. Head, thorax and abdomen dark grey.

ab. lomasaria Cottam. Lancs. & Cheshire Nat. 16 p. 21 1923.

Albino. The usual black markings replaced by pale orange-brown, or buff.

ab. decolorata Cockayne. Ent. Rec. 52 p. 96 1940.

Similar to carbonaria but the black replaced by buff.

ab. semivirgata Cockayne. Ent. Rec. 65 p. 168 1953. pl. 12 f. 22.

On the forewings the first and second lines are united to form a large black mark on the costa. Hindwing normal.

ab. suffusa Cockayne. Ent. Rec. 65 p. 168 pl. 12 f. 23 1953.

Forewing with black speckles tending to become confluent longitudinally especially in the space posterior to the median nervure. Marginal area white with a few black scales; interneural black spots on the termen well developed, the discoidal spot large. Hindwing discoidal very large with a broad ill-defined band running from inner margin to a point opposite discoidal where it almost unites with two of the weak spots on the margin. Black scales along median nervures as far as transverse band, a few black scales in cell and many more between median nervure and nervure 2 and the inner margin. The rest of the wing almost white.

ab. nigricosta Cockayne. Ent. Rec. 65 p. 241 1953. (fig. Barrett pl. 301 f. 1B.)
Forewing with the costa from base to subapical mark with a broad black band which includes the discoidal spot. The rest of the wing white speckled with black.

ab. albapicata Cockayne. Ent. Rec. 65 p. 168 pl. 13 f. 17 1953.
Of the black carbonaria form but with the apex of the forewing white lightly speckled with black and an insignificant patch on the termen between nervures 3 and 4. The costal part of the hindwing is speckled with white.

ab. carbonicolor Brückova. Acta Ent. Mus. Nat. Prague 26 p. 3 1948.

ab. soffneri Tykac. Acta Soc. Ent. Bohem. 38 p. 55 1941.

ab. svejbekia Hoffmeyer. Flora og Fauna, 1960, 66, p. 15, fig.
Of the light nominate form, but with a broad black stripe on either side of the median area, and broadly united along the costa. The black transverse marking is also well-expressed on the hindwing. The abdomen, and, in the upper figure, also the thorax, is essentially black.

ab. morleyi Chalmers-Hunt. Ent. Gaz. 1964. 15. p. 138. pl. 4. f. 1.
Characterised by a broad rather irregularly shaped, black transverse band in the postmedial areas of the otherwise much more typically marked fore and hindwings.
Type in the Rothschild-Cockayne-Kettlewell Collection.

ab. nigricans Meves. Ent. Tidskr. 1914. 35. p. 126.
The forewings so strongly black-dusted, that in their inner half only a small patch, particularly on the inner margin, remains pale. Hindwings more strongly dusted than usual, and showing a marked, continuous, black, fine wavy transverse line beyond the discoidal lunule. (From the German translation on p. 138.)
Presumably a form of ab. insularia Th.-M.

abruptaria Thnbg.

aberrational forms etc.

ab. brunneata Tutt. Ent. Rec. 10 p. 172 1898.

Forewings bright brown tending to chestnut-brown, the basal and elbowed lines paler, the subterminal line almost obsolete centrally, but forming a pale wavy line at its origin on the costa. The basal area darker brown and a blackish wedge-shaped spot lies in the second hollow of the elbowed line extending onwards³ to the subterminal but not to the outer margin. Fringe chequered. Hindwings with the outer portion of the same tint as the forewings but gradually becoming darker towards the base, which is very dark fuscous and a pale curved transverse line extends across the wing from the anal angle almost to the outer margin. Thorax pale as in typical form, abdomen almost of the tint of the hindwings.

ab. fuscata Tutt. Ent. Rec. 10 p. 172 1898.

The bright red-brown hue of the preceding brunneata gives place to deep sooty fuscous, inclining to blackish, but usually a trifle paler in the median area of the forewings, otherwise the general markings of the preceding form are maintained the basal area is blacker, the wedge-shaped marking traceable but continued as a transverse band between the elbowed line and subterminal to the inner margin. The basal, elbowed and subterminal transverse lines traceable, but less distinct, the pale costal portion of the subterminal being less conspicuously marked. The fringes chequered. Hindwings also sooty fuscous, the upper median transverse line being represented by a black line, the outer transverse line by the curved shading directly exterior to it but less marked than in brunneata. Thorax of the ♂ usually pale but mixed with fuscous scales, ♀ always pale. Abdomen dark fuscous in both sexes.

ab. unicolor Tutt. Ent. Rec. 10 p. 172 1898.

~~==theobromaria-Turati. Nat. Sic. 21 p. III pl. 6 f. 42-1909-10.-~~

The most extreme of these dark forms. All the pale markings lost except a small apical point placed towards the costal termination of the subterminal line. It is practically unicolorous, the pale areas of fuscata, the preceding, being lost in the dark ground, only traces of the black markings are visible, these being also lost in the almost unicolorous sooty-black colour that is spread all over the wings. Antennae and abdomen are equally dark, the thorax paler but not so pale as in brunneata and fuscata. This appears to be the nearest approach yet reached to an unicolorous form.

ab. barcinonaria Bellier. Ann. Soc. Ent. Fr. 1862 p. 127 pl. I f. 2.

~~=theobromaria-Turati. Nat. Siciliano. 21 p. III pl. 42 1909-10.~~

Unicolorous melanic. This form was described as a species and then placed as a form of *H. japygiaria* Costa. Wehrli and various other authors now state that it is in reality a form of *abruptaria* (see Seitz 4 Suppl. p. 449), Wehrli having acquired the Type.

The figure shows all wings fuscous with no trace of any normal yellowish ground. The transverse lines of the forewing are well defined as thin black lines, the black discoidal spot distinct. Hindwing with a well defined black median line. Wehrli's figure in Seitz 4 Suppl. pl. 39 C shows no trace of the discoidal spot of the forewing.

ab. coarctata Cockayne. Entomologist 82 p. 49 pl. I f. 3 1949.

Forewing with the median line absent and the ante and postmedian lines approaching one another closely at the discoidal spot, then running parallel and close together often united by dark scales on the median nervure and nervure 2. In more extreme cases the lines themselves touch and are sometimes fused to form a Y.

ab. interrupta Cockayne. Entomologist 82 p. 49 pl. I f. 5 1949.

The ante and postmedian lines running from the costa are united at the discoidal spot forming a V; the inner ends of the lines are also united near the inner margin forming a small oblique loop. There are no lines whatever in the middle of the wing.



ab.knightaria Cockayne. Entomologist 82 p.50 pl.I f.7 1949.

All the normal lines on both wings are absent, the whole insect having a suffused appearance. Forewing with costa blackish-brown, the anterior part pale from the base to a point beyond the discoidal spot, which is often absent. The dark blotch just external to the postmedian line intensified, black, and without sharp outline; running outwards from the blotch is the usual subapical brown mark, but the pale loops separating it from the blotch, are absent, or at most indicated by an indistinct pale line. The apical mark present, but not sharply demarcated; from the black blotch to the inner margin is a broad reddish-brown band with ill-defined borders. Hindwing blackish-brown from the base to postmedian, in most specimens crossed near the base by a faint, ill-defined pale line; the rest of the wing is dark brown, but usually separated from the blacker basal part by an indistinct pale stripe. All the usual sharply defined markings are absent.

gen. aest. aestivalis Dannehl. Ent. Z. 41 p.354 1927.

The summer form or second generation. Ground colour dull greyish-yellow, lines fine and not heavily marked, sometimes running into the dark transverse bands. The dark edge of the costa is particularly narrow and sometimes so pale as to be hardly visible.

cinctaria Schiff. aberrational forms etc.

ab.columbaria Cockayne. Ent.Mon.Mag.84 p.267 pl.E f.II 1948.

Ground colour pale dove-grey; on the forewing the basal and antemedian lines are almost invariably fused to form a single thin black band and the postmedian is fused with the thin dark line running just external to and parallel with it to form another thin black band; in the marginal area there is a variable amount of dark shading; there are no other markings in the median area except the pale discal spot, which is faintly visible. On the hindwings the postmedian and sub-marginal lines are present but the antemedian is absent.

ab.paradoxa Cockayne. Ent.Mon.Mag.84 p.267 pl.E f.I0-I2 1948.

On both wings the basal area and the whole of the marginal area outside the postmedian line are darkened and the nervures are blackish, giving the insect a radiated appearance, the median area is whitish with very slight freckling except along a line from the base to the discal spot and from the border along nervure 4 to the disc; the discal spot itself is white and distinct, being surrounded by dark scales. In the female the median area is more heavily freckled and the margin of the forewings is marbled and the nervures only slightly darkened; on the hindwing the postmedian line is distinct and the nervures between it and the border are blackened.

ab.fuscaria Cockayne. Ent.Mon.Mag.84 p.267 pl.E f.I3 1948.

The ground colour of both wings is dull pale brown, but all the usual markings are visible.

ab.consimilaria Duponchel. Hist.Nat.Lep.7 pt.2 p.386 pl.I62 f.I 1829.

Forewings with very little pattern, almost unicolorous grey-brown, the basal area somewhat darker. The discoidal mark is completely absent but the transverse lines are present as thin black lines.

ab.duponcheli Wagner. Z.Ost.Ent.Ver.8 p.41 fig.1923.

Light to whitish-grey, the marginal field, except for the whitish apical mark, is moderately darkened, the transverse bands very distinct. The basal band becomes one broad band through the the double lines being filled up with blackish. The middle moon (discoidal) is distinctly visible. Hindwings also light with very distinct markings.

The main character of this form appears to be the wide blackish basal band.

ab.fuscolimbata Heinrich. Dtsch.Ent.Z.(1916)p.531 1917. pl.4 f.22.

The basal and marginal areas of the forewing are almost markingless dark brown on either side of the normal coloured middle field. Hindwings with only the outer margin darkened.

ab.lucialata Fuchs. Stett.Ent.Z.45 p.267 1884.

Very light whitish-grey, very sparsely and finely dusted with brown, markings distinct but without the middle moon (discoidal). Just below apex is a brownish spot going in the direction of the outer transverse stripe which meets another brown spot on the outer transverse stripe just above the middle. For the rest, all wings are uniform light white-grey without brownish cloudiness.

ab.schulzei Heinrich. Dtsch.Ent.Z.(1916) p.360 & 531 pl.4 f.I7 1917.

Albino. The usual markings are weak red-yellow, the ground colour yellow-grey without dusting.

ab.maculata Reuter. Acta.Soc.Faun.Flor.Fenn.9 p.64.

Smaller and darker than typical form, more unicolorous with the discal spot much larger.

From Prout's description in Seitz, I have not seen the original.

ab. *caminariata* Fuchs. Stett. Ent. Z. 45 p. 267 1884.

All parts of the wings, except the costal margin of hindwing, are darkened by fine, sooty-brown dusting, resulting in the markings becoming less distinct. The costal area of the hindwing remains free from this dusting.

ab. *fuscaria* Cockayne has a darkened ground colour, it is not darkened in the same manner as the present form.

ab. *submarmoraria* Fuchs. Stett. Ent. Z. 45 p. 267 1884.

= *pascuaria* Huene. Berl. Ent. Z. 46 p. 316 pl. 6 f. 4 1901.

Basal and marginal field of forewings blackened forming bands, the middle field whitish, sharply contrasting. Hindwings show a brown darkening in the marginal area which decreases towards the costa, which it does not reach.

ab. *deletaria* Rebel. Berge's Schmet. 1910 p. 401. (Barrett pl. 311 f. I H.)

The transverse markings completely absent, the wings pale.

ab. *nigraria* Rebel. Berge's Schmett. 1910 p. 402. (Barrett p. 311 figs. I i & I j.)

= *erebaria* Krulikovsky. Rev. Russe. Ent. 9 p. 313 1910.

Wings unicolorous sooty black.

The figure shows no markings but a subterminal row of pale red-brown spots is present. In the second figure Ij the transverse lines are faintly visible; it is not, in my opinion, the same form.

ab. *separata* Smith. Ent. Rec. 66 p. 97 pl. 3 f. 6 1954.

Similar to *submarmoraria* Fuchs but with a blackish-brown line dividing the median white band, from the costa to the inner margin.

ab. *tangens* Lempke. Tijdschr. Ent. 95 p. 236 1952. (descript. vol. 90 p. 147)

The two transverse lines which border the central area of the forewings touch each other below the middle and then separate again.

ab. *berylaria* Richardson. Ent. Rec. 64 p. 269 pl. II f. 3 1952.

Ground colour uniform pinkish-grey. Two cross-lines and subterminal blotches clearly defined but reduced to a minimum, giving a sharply etched effect.

ab. *adustaria* Preissecker. Verh. zool.-bot. Ges. Wien 72 p. (94) 1923.

The basal and marginal areas of forewing and the marginal area of hindwing are practically unicolorous brownish-black. Remaining parts strongly and uniformly dark dusted, no whitish-grey areas remain. Dark markings distinct but the wavy subterminal only visible here and there.

subsp. *bowesi* Richardson. Ent. Rec. 64 p. 269 pl. II f. 2 & 7 1952.

The Scottish race. Silvery white ground and blackish grey markings, differs from the English specimens by the almost complete absence of brown in the ground and markings.

rhomboidaria Schiff.

= gemmaria Brahm.

aberrational forms etc.

ab. defloraria Dannehl. Ent. Z. 41 p. 393 1928.

= defumaria Lenek. Ent. Nachr. blatt 3 p. 123 1951.

Ground colour whitish-grey, the markings very weak, dull grey without brownish tinge.

ab. fimbriaria Stephens. Ill. Haust. III p. 188 pl. 30 f. 1 1831.

Ground colour ashy-grey, (in the figure it is light yellow-brown) scarcely dark-dusted, with a prominent discoidal spot on forewings but very few other markings. All wings have a wide fuscous band from the postmedian outwards to the margins, the band containing a broken chain of whitish spots, representing the subterminal.

ab. deumbrata Lempke. Tijdschr. Ent. 95 p. 231 1952.

The central shade of the forewings absent, other markings normal.

ab. brunneata Lempke. Tijdschr. Ent. 95 p. 231 1952.

Ground colour of the wings dark brown, without grey tint.

ab. illineata Schawerda. Verh. zool.-bot. Ges. Wien 77 p. (81) 1927.

Ground colour normal but without transverse line marking. On the forewing the discoidal stands out as a solitary isolated mark.

ab. australaria Curtis. Brit. Ent. 3 p. 113 1826.

Of a deep ochraceous tinge with powerful markings.

ab. haggarti Williams. Ent. Rec. 44 p. 46 1932.

Head, thorax, patagia, abdomen and wings of a smooth pale yellowish-grey. The smooth appearance, a conspicuous feature in both sexes, is due to the almost entire absence of the freckling of black dots, which gives a rougher and darker appearance to normal specimens, in fact the yellowish-grey ground, in spite of the pale appearance, is not paler than the whitish-grey of typical rhomboidaria, the dark appearance of which is due to freckling, which is also a prominent feature in the bright ochreous ab. australaria Curtis. On the pale ground the usual markings are indicated, but in a paler shade than in other forms; the cross-lines on the forewings quite weakly marked, the discoidal spot, on the other hand, being very distinct and prominent and accentuated by a clear pale area below it; the subterminal line distinct, and the apical and subapical markings clear and conspicuous. Hindwings particularly smooth, but the markings are indicated.

ab. perfumaria Newman. Entomologist 2 p. 246 & 248 1865.

Newman gives several references to this form but no fixed description, but cites the figure in Wood's Index no. 511 p. 85. Most authors have evidently taken this as perfumaria Newman.

Ground colour violet-grey without the usual brown tinge seen in this species. Said to be found only in the neighbourhood of London.

ab. millierata Gumpfenberg. Syst. Geom. pt. 5 p. (128) 1892.

Named from Milliere's description and figure in Icon. I p. 181 pl. 10 f. 7 1859. The description reads "General colour of the wings much darker than in type, smoky. Ordinary lines very well indicated standing out against the ground colour. The main character of this form is that the space between the elbowed line and the fringe is as if charcoaled. The discoidal spot, without a pupil, is deep black leaning against the costal margin, it is not united to a median shade and is all the more distinct from the ground colour."

The figure shows the wings very pale grey with a tinge of yellowish but with a broad fuscous band to all wings from the postmedian outwards to the margin. The hindwings have a pale subterminal line in the dark band.

This form is extremely similar to ab. fimbriaria Stephens but there is no subterminal line in the blackish border of the forewing.

ab. melas Constantini. Atti. Soc. Nat. u. Mat. Modena (5) v. 3 1916. p. 17.

The median line of the forewings absent and a darker outer area of both wings.
This description is from Wehrli in Seitz 4 Suppl. I have not seen the original.

ab. rebeli Aigner. Rovart. Lap. 12 p. 152 1905.

All wings unicolorous black, only the subterminal wavy line visible.

ab. nigra Adkin. Proc. S. Lond. Ent. Nat. Hist. Soc. 1908-9 p. 85 1909.

= nigerrima Moreau. Bull. Soc. Ent. Fr. 1916 p. 188 pl. 1 f. 1-4.

Wings unicolorous black. The specimens collected by Adkin have a postmedian line showing, in a pale indistinct yellowish colour, some also the basal line in a similar manner.

The figures of nigerrima Moreau show the same character.

gen. aest. minor Fuchs.

Specimens of a second generation, smaller than typical form.

ab. simplicia Lenek. Ent. Nachr. blatt 3 p. 123 1951.

The discoidal cell mark fuses with the middle shadow.

ab. obsoletaria Lenek. Ent. Nachr. blatt. 3 p. 123 pl. 4 f. 2 1951.

The transverse lines are only represented on the veins as streaks.

ab. orcus Lenek. Ent. Nachr. blatt. 3 p. 122 1951.

ab. exquisita Lenek. Ent. Nachr. blatt. 3 p. 122 pl. 4 f. 4 1951.

ab. unigrisea Lenek. Ent. Nachr. blatt 3 p. 122 pl. 4 f. 8 1951.

ab. contracta Lenek. Ent. Nachr. blatt. 3 p. 123 1951.

ab. defunaria Lenek. Ent. Nachr. blatt. 3 p. 123 1951.

ribeata Clerck.

= abietaria Schiff.

aberrational forms etc.

ab. illineata Lempke. Tijdschr. Ent. 95 p. 237 1952.
The transverse lines fail.

ab. sericearia Curtis. Brit. Ent. 3 p. 113 pl. 113 1826.

Silky brown, speckled irregularly with ochre. Forewings darkest, the base very dark, the markings distinct. Hindwings fuscous with a waved transverse line, dark on the internal and light on the external edge. Outer part of the wing speckled with longish ochraceous spots.

The figure shows a blackish-brown insect with bold markings, the original painting which is in the Tring Museum is not nearly so dark but still darker than typical specimens.

ab. nigra Cockayne. Ent. Rec. 60 p. 9 1948.

Forewing unicolorous black with discal spot visible; hindwing unicolorous blackish-brown, becoming black towards the margin, discal spot black; thorax black, abdomen blackish-brown with a pale anal tuft in the male.

ab. aurichalcea Dioszeghy. Verh. Siebenburg Ver. Naturw. 79-80 p. 269 1930.

Forewing ground colour light ochreous-yellow, hindwings a little greyish, the normal well-developed markings and the sparse dusting greenish-brown.

repandata L. aberrational forms etc.

ab. similata Vorbrodtt. Mitt. Schweiz ent. Ges. 12 p. 487 1917.

= maculatoides Nordstrom. Svenska Fjar. 1941 p. 308 pl. 43 f. 10b.

Forewings with a large blackish spot or oblong mark in cell 3. The figure shows this between the subterminal wavy line and the postmedian transverse line, connecting with both, and situated a little above the middle of the wing.

ab. fuscomarginata Lempke. Tijdschr. Ent. 95 p. 238 1952.

Ground colour whitish-grey, markings normal, a dark band along the outer margin between the sub^{margin}terminal line and the fringe.

ab. contrasta Lempke. Tijdschr. Ent. 95 p. 238 1952.

Ground colour of the wings grey, covered by numerous dark brown striae, the ante-median line of the forewings at the basal side, and the postdiscal line of both wings at the outer side sharply bordered with a narrow pale line, submarginal line in the Type is very indistinct.

ab. fusca Lempke. Tijdschr. Ent. 95 p. 238 1952.

Ground colour of the wings dirty dark brown (fuscous), the discal spot of the forewings and the transverse lines clearly visible, the submarginal line paler brown-grey than the ground colour, distinct.

ab. pseudobastelbergeri Foltin. Z. Wien Ent. Ver. 27 p. 36 1942.

The stripe-like middle shadow and the inner transverse stripe together form a middle band, the two lines uniting towards the inner margin.

ab. brunneata Heydemann. Ent. Z. 52 p. 23 pl. I f. 9 1938.

The ground colour of all wings ochreous brownish, also all the usual white areas including the undulate line, are smoked ochreous brownish. Head, thorax and abdomen also brownish.

ab. coarctata Cockayne. Ent. Rec. 54 p. 35 pl. 2 f. I 1942.

Ground colour of a soft brown, with none of the usual speckling. On the forewing the transverse lines are concentrated to form a narrow black median band, which is widest at the discoidal spot.

ab. destrigaria Haworth. Lep. Brit. 1809 p. 276.

Ground colour grey, strongly dusted, the fuscous lines subobsolete but the subterminal distinct.

ab. conversaria Hubner. Eur. Schmett. Geom. pl. 76 f. 393 & pl. 62 f. 321 1809-13.

The banded form in which the two transverse lines of the forewing enclose a dark area, brownish to blackish, the space between them being filled with either tint, to form a strong median band. The outer area is much paler in contrast as is also the basal area. Hindwings also with a broad band.

ab. mendeli Williams. Ent. Gaz. I p. p. 36 1950.

The homozygous form of conversaria. The median band very dark, almost black, the basal and outer areas almost white to pure white, the margins with the band of the same tint as the median band.

ab. nigricata Fuchs. Stett. Ent. Z. 36 p. 231 1875.

Upperside, especially of the forewings densely dusted black, only between outer transverse line and the sharp white undulating line are lighter areas, which are ash-greyish, especially towards the inner margin. The transverse stripes absent, a trace left of the outer one. Margins carbon-black on outer side of undulating white line. Hindwings from base to undulating line ash-grey with fine black dusting, not nearly so dense as on forewings.

ab. nigra Tutt. Brit. Moths. 1896. p. 299.

An intensely black form found near Huddersfield and Sheffield.

Presumably much blacker than nigricata Fuchs but the description is too short to be certain. Our specimens from these industrial areas are rather glossy blackish brown to blackish and different from nigricata Fuchs with its distinct pale subterminal line, this line is indicated in our specimens in an obscure orange-brown tint, never sharp or whitish.

ab. nigropallida Mansbridge. Entomologist 45 p. 94 1912.

Like nigra Tutt, deep velvety black with larger or smaller areas of pearly grey on both fore and hindwings. In extreme examples the grey area occupies the whole of the central part of the wings, and in others only a small part of the alar surface. All the insects are symmetrical and where the subterminal crosses the pale blotches it is somewhat lighter in colour and can be clearly seen. These grey areas are fully scaled, not as in the transparent forms of O. bidenata, thinly scaled or with scales absent, but more like the so called bleached E. janira.

ab. ochronigra Mansbridge. Entomologist 45 p. 95 1912.

Like ab. nigra Tutt, deep glossy black ground without irroration but with the terminal and subterminal lines very distinct and having the usual pale patches on the subterminal line of the forewings of a clear ochreous colour instead of white.

ab. unistrigata Bruckova. Acta. Ent. Mus. Nat. Prague 23 p.

ab. joukli Bruckova. Acta. Ent. Mus. Nat. Prague 23 p.

ab. bistrigata Bruckova. Acta. Ent. Mus. Nat. Prague 23 p.

ab. bilineata Bruckova. Acta. Ent. Mus. Nat. Prague 23 p.

ab. stigmula Bruckova. Acta. Ent. Mus. Nat. Prague 23 p.

subsp. muraria Curtis. Brit. Ent. p. 113 1827.

From Scotland and N. England. Smaller, of a uniform grey, more speckled and the markings more obscure.

subsp. sodorensium Weir. Entomologist 14 p. 220 pl. fig. 12-13 1881.

From Hebrides. Leaden-grey, varied more or less with darker markings; females with no trace of brown, only a faint trace sometimes in the male. Resembles T. consonaria in colour and size

Geom. 260 continued.
p. 3.

repandata L. continued.

ab. defasciata Hoffmann & Kloss. Mitt. Nat. Ver. f. Steiermark 54 p. 40 Sep. 1918.

ab. pseudoconversaria Raebel. Verein f. schles. Insektenkunde 1924.

lichenaria Hufn. aberrational forms etc.

ab. cineraria Borkhausen. Naturg. Eur., Schmett. 5 p. 165 1794.
The colour ash-grey or whitish.

ab. obscuraria Schneider. Ent. Z. 54 p. 224 1941.

From the basal field of the forewings outwards strongly blackened, in the marginal field a little lighter, the markings showing through weakly, hindwings only a little darker than normal.

ab. perfumaria Dannehl. Ent. Z. 47 p. 140 1933.

Very strongly blackened, markings only present as broken lines and little streaks. Hindwings black-grey, with wiped out dark band in the middle.

ab. variegata Lempke. Tijdschr. Ent. 95 p. 240 1952.

Dark green, from the discal spot to the inner transverse line a striking pale streak, both transverse lines sharply bordered with pale.

ab. impuncta Lempke. Tijdschr. Ent. 95 p. 241 1952. (descript. vol. 90 p. 147)

The central spot of the forewings is absent.

ab. chretieni Lhomme. Amat. Pap. 4 p. 206 1929. pl. 4 f. 5.

The basal and outer area blackish, the median area between the ante and postmedian bands pale grey with very large discoidal spot. Hindwings with the outer part darker.

ab. oblitteraria Wagner. Z. Ost. Ent. Ver. 4 p. 11 1919.

The transverse lines more or less suffused.

ab. virgini Nordstrom. Svenska Fjar. 1941-42 p. 308.

Moss-green with cell point and vanishing lines, with orange-yellow mixed in. From Wehrli's description in Seitz, I have not seen the original.

jubata Thnbg. aberrational forms etc.

ab. glabraria Hubner. Eur. Schmett. Geom. pl. 3I f. 162 1796-99.

The figure shows the median area of the forewings with a well developed transverse band running from the discoidal spot to the inner margin. The ante and postmedian lines also well developed and the subterminal shade shows as a definite line, making four transverse conspicuous lines. Hindwings with strong postmedian.

ab. nigrocinctata Fuchs. Stett. Ent. Z. 36 p. 232 1875.

The large discoidal spot of the forewings forms a nucleus of a very strong middle shadow. From this middle point it is sharply bent towards the base and continues like a dark belt in an oblique direction on all wings. The shadow is weaker on hindwings than on forewings, just a soft blackish dusting. On forewings the black is especially strong at two points, first between the discoidal and costal margin where it forms a large quadrangular spot, and second, at the inner margin where it shows as a keel-shaped oblique black spot, its base on the inner margin and deeply penetrating into the middle shadow.

Condensed this means that there is a wide blackish band more or less filling the area between the antemedian line and the middle shadow.

ab. obscura Fuchs. Stett. Ent. Z. 36 p. 233 1875.

All wings, also body and antennae uniformly covered with a delicate bluish black-grey. Every marking is invisible, the undulate line hardly indicated, only the large black discoidal spot of the forewings still very distinct. Fringes of the colour of the wings, a little darkish chequered.

ab. semiothisata Lenz. Mitt. munchen Ent. Ges. 8 p. 47 1917.

Ground colour grey-white, dusted with dark grey atoms. Discoidal spot present and connected to the costa with grey. A black transverse band in the basal field and a spot before apex on the costa shaped as in jubata. In this form there is a black-grey semi-lunular (half-moon shaped) spot below the apex on the outer margin which resembles the one in *S. alternaria* which gives the wing apex the appearance of being concave. An outer black-grey line which separates the marginal field a little from the middle field runs quite differently than in normal jubata. This line is only parallel to the margin in its middle third then each end bends sharply towards the base and then goes steeply to the costa and inner margin, reaching the costa at a point midway between the discoidal mark and the black spot before the apex and widening into a black-grey spot. Between both of the most distinct spots on the costa there is therefore yet a third. Hindwings with weak discoidal spot.

roboraria Schiff. aberrational forms etc.

ab. *extincta* Wagner. Z.Ost.Ent.Ver.5 p.41 1920. fig.

Ground colour brown-grey, the transverse bands almost completely disappeared. The figure shows the wavy subterminal on both wings but only traces of the postmedian line and no antemedian or basal.

ab. *nigrofasciata* Lempke. Tijdschr.Ent.95 p.242 1952.

Ground colour blackish, wings with thick distinct postdiscal line, other markings obsolete.

ab. *infuscata* Staudinger. Cat.Ed.2 p.165 1871.

Both wings blackish-grey through the heavy black dusting on the light ground colour, the markings still distinct.

ab. *varia* Cockayne. Ent.Rec.60 p.10 1948.

Melanic form, peppered all over with dark scales like the darkest specimens of the preceding *infuscata* Stgr., but has irregular streaks of the colour and pattern of typical *roboraria* scattered asymmetrically on all the wings.

ab. *mélaina* Schulze. Int.Ent.Z.6 p.305 1913.

Upper and underside unicolorous bright bluish-black, the markings complete, shining through satin-like.

ab. *illustris* Richardson. Ent.Rec.64 p.269 pl.II f.I 1952.

All markings strongly pronounced. Hindwings strikingly banded by a broadening of the ante and postmedian lines.

ab. *subtuniformis* Lucas. Ent.Ber.(Amst.).1960.20.p.230.

The underside of both fore- and hindwings (including the light apex of the forewings) equally greyish.

punctinalis Scop.

= consortaria F.

aberrational forms etc.

ab. consobrinaria Borkhausen. Scriba's Beitr. I p. 25 pl. 3 f. 2b. 1790.

Wings grey with numerous dark atoms, the pale subterminal line very distinct and outwardly bordered with darkish grey, forming a marginal band on all wings.
= pulcherrima Kaucki. Polsk Pismo Ent. p. 123 1920.

ab. obsoleta Lempke. Tijdschr. Ent. 95 p. 245 1952.

Ground colour not or hardly darkened, nearly all the markings have disappeared.

ab. distincta Lempke. Tijdschr. Ent. 95 p. 245 1952.

The two transverse lines on the forewings black, sharp, nowhere interrupted; central shade very distinct, submarginal line sharply contrasting.

ab. variegata Lempke. Tijdschr. Ent. 95 p. 246 1952.

The central shade stronger, the postmedian line on both wings broadly bordered with dark, marginal area darkened.

ab. fasciata Wagner. Z. Ost. Ent. Ver. 5 p. 41 fig. 1920.

The transverse markings on both wings are remarkably broadened so that there are broad middle shadows. Apart from this the transverse line at border of middle field and the one in the marginal area is broadly dark shadowed, the forewings also have a blackish basal area. All markings seem to be a little suffused. The figure shows three suffused blackish bands on each wing, especially distinct and separated on hindwings, the basal area of the forewings is also dark, the median area of normal pale grey.

ab. grisearia Bartel. Iris 15 p. 220 1902.

Very small, with uniform grey ground colour without any trace of brighter mixing-in. The suffused markings hardly show up. From Orenburg. Probably a local race, Lempke has named the same sort of grey, markingless form as obsoleta, see above.

ab. bicolor Lempke. Tijdschr. Ent. 95 p. 246 1952.

The basal area of the wings, and on both wings the space between central shade and hindmargin darkened; central band of forewings, (between the first transverse line and central shade) and basal half of hindwings of the normal pale colour.

ab. intermedia Lempke. Tijdschr. Ent. 95 p. 246 1952.

Ground colour of the wings dark grey, all markings present.

ab. humperti Humpert. Ent. Z. 12 p. 59 1898.

Wings and body beautiful black with very fine white dusting, or brownish with similar dusting. Discoidal mark usually distinctly visible, the outer transverse line in the form of teeth on the veins in a blacker colour, the subterminal undulate line shows up strongly in silvery white, its dark shadow lost in the dark colour of the wings.

ab. nigra Warnecke. Ent. Rdsch. 55 p. 394 1938.

More extreme than humperti, the preceding form. All wings pure black without the white dusting, with only indistinct whitish spots remaining of the submarginal line of the forewings.

ab. flavescens Hannemann. Int. Ent. Z. 14 p. 123 1920.

Albinotic. The ground colour yellowish-grey without dusting.

ab. myrtilloides Dannehl. Ent. Z. 47 p. 139 1933.

Almost without markings. The outer area uniformly slightly darkened, more contrasting on the hindwings, in which the basal field is somewhat lighter than normal. Both fields are more or less strikingly separated by a blackish line. The discoidal mark distinct.

ab. conspicuata Cockayne. Ent. Rec. 54 p. 35 pl. 2 f. 3 1942.

Pale weakly marked form with a strongly developed broad wavy subterminal line in both fore and hindwings. The mark like a W at the top of the subterminal line of the forewings is very distinct.

This brownish subterminal line is outwardly bordered by the normal pale whitish subterminal.

ab. angulata Hübner.

crepuscularia Hubn.

=biundularia Esp.

aberrational forms etc.

ab.fasciata Wolff. Ent.Med.I9 p.244 pl.I f.20 I935.

The figure shows a rather broad antemedian band and a somewhat broader postmedian band of a dark colour on forewings and a broad postmedian band on hindwings, the median and subterminal shades are also much heavier than in typical form but not band-like. Wolff gives this name on the assumption that fasciata Reuter (Peters) belongs to bistortata Goeze.

ab.venosa Newstead & Smith. Entomologist 52 p.226 fig.I I9I9.

General ground colour of the forewings and fringes is almost pure white; the costal margins, hindmargins and nervures are sooty-brown, the last named becoming paler distally and almost disappearing towards the hindmargins. Hindwings sooty-brown faintly speckled with white, bearing two dark, wavy transverse lines, with a broad white band before the outer margin showing sooty-brown nervures; the outer margins and fringes are the same as in the forewings.

ab.stovinarina Huggins. Entomologist 9I p.208 I958.

Forewing base greyish-drab, the first double line black and completely filled in with no trace of lighter colour. Space between first and second lines white, very faintly irrorated with fuscous. The remainder of the wing, including the cilia, black, with the usual lines showing a little darker. Hindwing base to about one third of the breadth of the wing white, very faintly dusted with fuscous. The remainder of the wing, including the cilia, black.

ab.varia Cockayne. Ent.Rec.60 p.10 I948.

Like delamerensis B.-White, the following, but with irregular streaks and blotches of the colour and pattern of typical form, scattered asymmetrically on the wings on both sides.

ab.delamerensis Buchanan-White. Entomologist 10 p.128 I877.

Wings smoky.

The description is vague, most authors, including Prout and Cockayne, assume it to be the form densely powdered with blackish fuscous that it appears to have a smoky ground colour, with only fine white irroration remaining.

ab.nigerrima Dammer. Ent.Z.46 p.70-71 fig.2 I932.

On forewings the basal field is black as far as the first transverse line, the neighbouring median field as far as the outer transverse line is of a silver-grey colour and crossed by a narrow black median shadow. From the outer transverse line out to the greyish-brown fringes, of the same deep black coloration as in the basal field but whilst in the basal field the veins are hardly visible, they are clearly visible in the median and marginal fields in consequence of the black and grey spotting. Hindwings blackish-grey as far as marginal field where they are as black as in the forewings; the fringes are somewhat lighter than those of the forewings.

ab.nigra Thierry-Mieg. Le Nat.8 p.237 I886.

Wings uniform blackish-fuscous, no white remaining except a slight subterminal line.

ab.pallidaria Krulikowsky. Rev.Russe Ent.9 p.313 I909.

Extremely pale.

Geom265 continued.
p.2.

crepuscularia Hbn. continued.

hybrid bacoti Tutt. Brit.Lep.5 p.32 1906.
Cross between crepuscularia ♂ and bistorata ♀.

hybrid bacoti-suffusa Tutt. Brit.Lep.5 p.32 1906.
Cross between crepuscularia ab.delamerensis ♂ and bistortata ♀.

hybrid mixta Tutt. Brit.Lep.5 p.34 1906.
Cross between bacoti-suffusa ♂ and ridingi-suffusa ♀.

hybrid reversa Tutt.Lep.Brit.5 p.35 1906.
Cross between crepuscularia ♂ and ridingi-suffusa ♀.

ab. brunneipennis Cockayne. Ent. Rec. 65 p. 241 pl. I3 f. 7 1953.

The thorax, abdomen and wings are of a uniform cafe au lait colour with the markings present; the submarginal line, which is white in the darker melanic forms, is of the same colour as the rest of the wing.

Extremely like obscurata Hein. but possibly not so dark in general tint.

ab. diluta Cockayne. Entomologist 83 p. 55 pl. I f. 8 1950.

All the dark brown markings of both wings are replaced by buff, making the wings almost unicolorous; the dark brown scales elsewhere are also replaced by buff.

Albinistic form comparable to C. cinctaria ab. schulzei Hein.

gen. aest. strigularia Stephens. Ill. Haust. 3 p. 192 1831.

Stephens gives this name for the smaller summer brood form occurring in England.

hybrid. ridingi Tutt. Brit. Lep. 5 p. 33 1906.

Cross between bistortata ♂ and crepuscularia ♀.

hybrid ridingi-suffusa Tutt. Brit. Lep. 5 p. 32 1906.

Cross between bistortata ♂ and crepuscularia ab. varia Cockayne (delamerensis) ♀.

bistortata Goeze.

= crepuscularia Dup.

aberrational forms etc.

ab. cinerea Lempke. Tijdschr. Ent. 95 p. 248 1952.

Ground colour of the wings, not darkened, without brown or yellowish tints, markings normal.

ab. flavescens Lempke. Tijdschr. Ent. 95 p. 248 1952.

Ground colour of the wings yellow grey to yellow-brown, not darkened, markings normal.

ab. intermedia Lempke. Tijdschr. Ent. 95 p. 249 1952.

Ground colour of the wings brown-grey, markings distinct.

ab. obsoleta Lempke. Tijdschr. Ent. 95 p. 249 1952.

Markings absent or obsolete, but ground colour not darkened.

ab. fasciata Reuter. 1900 in J. E. Aro, Suomen Perhoset.

The basal line and the postdiscal line of the forewings forming a broad black-brown band. Hindwings with a postdiscal band.

ab. obscurata Heinrich. Dtsch. Ent. Z. (1916) p. 531. pl. 4 f. 26 1917.

The whitish ground colour replaced by brownish-grey, pattern normal but the white wavy lines have mostly vanished. The figure shows the insect almost unicolorous with only the dark transverse bands standing out.

Described under crepuscularia Schiff.?

ab. defessaria Freyer. Neue Beitr. 6 p. 46 pl. 510 f. I 1852.

The figure shows the wings darkish grey, the markings vanished except for the undulate line and a few dark middle streaks on the veins.

ab. schillei Klemensiewicz. Soc. Ent. 8 p. 18 1893.

The light ground colour everywhere uniformly covered with a quite dark brown dusting with a whitish undulate line showing up well against the dark background like a band, and with black marginal points. The undulate line is almost over its whole length regularly serrated, on its inner side uniformly shadowed a little darker. Hardly a trace of other markings, only the transverse line of the outer area, and shapeless dark points in the middle of the wing are visible on the veins. Antennae, head and dorsum same colour as wings, the abdomen darker still, almost soot-black.

ab. pasetii Thierry-Mieg. Le Nat. 8 p. 237 1886.

The ground colour not pale but blackish-brown, the markings faintly visible.

ab. extrema Raebel. Int. Ent. Z. 24 p. 104 pl. figs. 5-8 1930.

Completely uniform dark slate to sooty-black without grey dusting, pattern completely absent except distinct black veins on forewings and mostly well defined subterminal lines on both wings. Body, and antennae same colour as wings, fringes somewhat lighter.

ab. albolimbata Alberti. Ent. Z. 64 p. 115 fig. p. 116 1954.

Wings very uniformly darkened but in sharp contrast the outer marginal area of both wings is broad, bright creamy colour, usually a little dusted with grey.

ab. bicolor Cockayne. Ent. Rec. 65 p. 241 pl. 13 f. 6 1953.

From base to postmedian line on both wings, and along the costa of the forewings to the subterminal line is blackish-brown; exrenal to this the wings are of the normal pale colour with the usual markings.

Similar to the preceding but less extreme.

ab. waiensis Richardson. Entomologist 73 p. 73 pl. I f. I-10 1940.

All wings with the terminal area occupied by a band of deep sepia, approaching black, which extends as far as the postmedian line from which it is separated by a narrow white line. There are also traces of a white subterminal line and a more distinctly defined pale submarginal line. Basal area clouded with sepia, the median band silvery white, lightly speckled with sepia except along the costa where the basal clouding extends. Discal mark on hindwings sepia. Cilia pale sepia, markings typical but deeper in colour on head, thorax, abdomen and legs.

ab. nigra Bankes. Ent. Mon. Mag. 41 p. 89 1905.

Forewings dull fuscous black with the extreme base white except on the costa. An elongate white patch, just inside the outer transverse line and rather above the middle of the wing, is always present and well pronounced in females, nearly or quite obsolete in the males. The outer transverse line is more or less visible, and there is a rather broad, subdentate white subterminal line often obsolete near the costa, and a narrow black discal mark is discernible above the inner edge of the white patch. Hindwings a little paler than forewings, the base white, a narrow dirty white postmedian line and a more or less well developed whitish subterminal line. Cilia of both wings pale brown with a black central transverse line.

ab. variegata Lempke. Tijdschr. Ent. 95 p. 251 1952.

Central area of the forewings whitish, whitish spots in the submarginal area; hindwings whitish from base to postmedian line

ab. obscurata Nitsche.

extersaria Hbn.

= luridata Bkh.

aberrational forms etc.

ab. pallida Lempke. Tijdschr. Ent. 95 p. 251 1952.

Ground colour only feebly suffused with dark, tint therefore much paler, transverse lines distinct.

ab. deumbrata Lempke. Tijdschr. Ent. 95 p. 251 1952.

The central shade of the forewings fails.

ab. obsoleta Lempke. Tijdschr. Ent. 95 p. 251 1952.

All transverse lines very indistinct, ground colour normal.

ab. virgata Lempke. Tijdschr. Ent. 95 p. 251 1952.

From the pale line outwards of the postdiscal line of the forewings, to the submarginal line, a complete sharply contrasting dark band; on hindwings a dark band at the inner side of the submarginal line, and the space between this line and the fringe is also darkened; for the rest normal.

ab. privata Zwiegelt. Z. Ost. ent. Ver. 3 p. 54 1918.

Below the normal white spot in the margin of the forewings there is a distinctly larger one, diffusely bounded on the inner margin and into which the inner-marginal half of the whitish line which touches it in normal specimens, is completely lost. Hindwing marking distinctly reduced, ground colour pale.

ab. fusca Jacquemin. Lamb. 46 p. 50 1946. (descript. Bull. Soc. Ent. Belg. 6 p. 46 1924) Melanistic female. All wings uniform blackish-grey, the cellular area cut off sharply in black, the outer basal, the cubit and subterminal area fairly well indicated in black, the latter enlarged in its middle as in typical form. Hindwings with the last two lines indicated in white.

ab. intermediata Raebel. Int. Ent. Z. 24 p. 104 pl. figs. II-I4 1930.

Remains of the markings as in typical form with strongly developed middle shades and similar black transverse lines on forewings, all wings strongly scaled black particularly in the basal and middle areas as well as the abdomen and thorax. Head and rump-tuft ochreous.

ab. variegata Raebel. Int. Ent. Z. 24 p. 105 pl. figs. 21-23 1930.

Varies so much that hardly two are alike. Ground colour paler or darker black, the latter particularly well developed in the females, the pale areas light ochreous. Middle shades generally visible but even darker than the ground colour. Median line usually present, pale on its basal side, postmedian sometimes complete sometimes interrupted and only consisting of the thickened veins. In the direction of the margin a constantly present pale boundary line from the costa to the inner margin, from the latter forming a pale streak to the middle shade, particularly present in the ♂. Subterminal line with an often strongly developed white middle spot, marginal area more or less pale, fringes chequered. Hindwing with sometimes an outer curved line, outer pale boundary almost invariably present, the subterminal indicated.

ab. fasciata Raebel. Int. Ent. Z. 24 p. 105 pl. figs. 21-23 1930.

Forewings with a continuous pale margin reaching inwards as far as the subterminal line and containing the usual white spot. Occurs in ab. intermedia but rarely, and is not so sharply apparent because of the pale back-ground. Commoner in ab. variegata and very uncommonly in ab. cornelseni.

ab. cornelseni Hoffmann. Int. Ent. Z. 2 p. 38. 1908.

= heckeli Pfau. Int. Ent. Z. 22 p. 195 pl. figs. Row 5 a & c. 1928.

ab.cornelseni Hoffmann. Int.Ent.Z.2 p.38 1908.

= heckeli Pfau. Int.Ent.Z.22 p.195 pl. Row 5 figs.a & c. 1928.

Ground colour black, no trace of sprinkling or of the middle shadow, the veins and inner transverse stripe deeper black. Beyond the middle a white transverse stripe runs from costal margin to inner margin, the lower part strongly broadened. The white undulate line does not reach the costal margin, ending just below the apex. The spot-like widening in the middle of this undulate line is pure white. Hindwings unicolorous black-grey, beyond the middle a somewhat lighter stripe. All fringes shiny grey.

ab.strandi Pfau. Int.Ent.Z.23 p.153 1929.

= heckeli Pfau. Int.Ent.Z.23 p.41 1929 (nec.vol.22 p.195.description changed.)
Almost completely black, without the white marginal spot which is present in ab.cornelseni.

ab.inalbata Oberthur. Lep.Comp.7 p.283 pl.171 f.1675 1913.

The usual white spot in the margin of the forewings is completely absent. The wings lack the usual variegated appearance, pale brownish with three transverse black clear-cut stripes in the median area of the forewings, rather closely approximated.

punctulata Schiff.

=punctularia Hbn.

aberrational forms etc.

ab. albescens Prout. Seitz 4 p. 379 1915.

Whitish, almost entirely without black dusting.

ab. obscuraria Paux. Bull. Sci. France et Belg. 35 p. 587 1901.

Unicolorous greyish-black.

ab. marginata Lempke. Tijdschr. Ent. 95 p. 253 1952.

Outer area of both wings darkened.

ab. intermedia Lempke. Tijdschr. Ent. 95 p. 253 1952.

Ground colour of the wings dark grey., markings visible.

ab. trilineata Bruckova Acta. Ent. Mus. Nat. Prague (Sbornik) 23 p. 123 1945.

Forewings with three sharp contrasting dark lines.

ab. semivirgata Cockayne. Entomologist 83 p. 55 pl. I f. 6 1950.

The basal and antemedian lines of the forewings are fused together to form a conspicuous dark band. Specimens with the lines closely approximating may be included, as they are probably determined by the same gene.

ab. simpliciararia Gozmany. Folia ent. Hung. (M. S.) 2 p. 62 1947.

ab. adustella Bruckova. Acta Ent. Mus. Nat. Prague 23 p. 123 1945.

ab. silbernageli Bruckova. Acta. Ent. Mus. Nat. Prague 23 p. 123 1945.

ab. obenbergeri Bruckova. Acta Ent. Mus. Nat. Prague 23 p. 123 1945.

Geom. 270. continued.
p. 2.

obscurata Schiff. continued.

ab. saturata Prout. Trans. City Lond. Ent. Nat. Hist. Soc. (1903) p. 38 1904.
= atra Linstow. Berl. Ent. Z. 53 p. 239 1909.
Intense and almost uniform black.

ab. mediorhenana Fuchs. Jahrb. Nassau. Ver. Nat. 57 p. 41 1904. pl. 2 f. 13.
Blackish, almost without pattern, instead of bands there are lighter or heavier spots.

ab. pallidemarginata Oberthur. Lep. Comp. 7 p. 667 pl. 180 f. 1758 1913.
The margins of both wings, from the subterminal line outwards, pale grey, the rest of the wings brownish-grey in contrast.

ab. bivinctata Fuchs. Jahrb. Nassau. Ver. Nat. 53 p. 53 1900.
Forewings with the transverse lines of the forewings very heavy, the external one continuing on the hindwings.

ab. approximata Lempke. Tijdschr. Ent. 95 p. 260 1952. (descript. vol. 90 p. 147)
The two transverse lines of the forewings are close together.

ab. vizzavonae, doronis and deblonayi Schawerda all belong to the Corsican subsp. bellieri Oberthur which shows a white spot in the distal area of the forewings, these aberrations therefore do not occur in British races.

ab. gouini Lhomme. Cat. Lep. France (Paris) p. 424 1923.
White, also the middle ringed-spots are lacking.

obscurata Schiff.

= obscuraria Hbn.

aberrational forms etc.

ab. *mundata* Prout. Trans. City Lond. Ent. Nat. Hist. Soc. (1903) p. 38 1904.

Almost pure white, with virtually no markings, excepting the annulets. Prout cites the figure in Barrett pl. 305 f. 1e & 1f, which shows the two transverse lines and annulets sharp and clear, on a white ground.

ab. *calceata* Staudinger. Cat. Ed. I p. 72 1861.

Wings cinereous, pale ashy, the black lines distinct, freckling somewhat sparse. The ground colour is white but the freckling gives the insect a pale grey to grey appearance.

ab. *fasciata* Prout. Trans. City Lond. Ent. Nat. Hist. Soc. (1903) p. 38 1904.

= *bicolor* Oberthur. Lep. Comp. 7 p. 308 pl. 179 f. 1756 1913.

Inner and outer areas pale, the median area considerably darkened to form a band.

ab. *woodiata* Prout. Trans. City Lond. Ent. Nat. Hist. Soc. (1903) p. 38 1904.

Ground colour pale as in *calceata* Stgr., but the freckling considerably denser, resulting in a darker and greyer effect, frequently accompanied by a decreasing indication of the black transverse lines. See Barrett pl. 305 f. 1c.

ab. *argillacearia* Staudinger. Cat. Ed. 2 p. 166 1871.

Sandy or almost reddish in colour.

ab. *pullata* Duponchel. Pap. de France 3 pl. 185 f. 6 1827-29.

= *dilucidaria* Stephens. Ill. Haust. 3 p. 267 1829-31.

The ground colour heavily sprinkled with brownish atoms, the transverse lines distinct and black.

Stephens *dilucidaria* has the wings cinereous, thickly sprinkled with blackish-brown dots, the forewings with two obscure lines composed of blackish dots, the hindwings with one. Possibly darker brown than *pullata* Dup. so that the transverse lines are not so clear.

obscurata Schiffermüller. Syst. Verz. p. 108 1775.

= *lividata* F. Mant. 2 p. 199 1787.

= *obscuraria* Hbn. Eur. Schm. Geom. pl. 27 f. 146 1796-99.

The type form according to most authors is medium grey with the lines well expressed.

ab. *anthracinaria* Esper. Eur. Schm. 5 p. 127 pl. 25 f. 3 & 5 1799. (fig. *carbonaria*)

Rather dark grey as the result of heavy sprinkling of blackish-grey dots or dusting, with a very slight tinge of brown.

ab. *uniformata* Prout. Trans. City Lond. Ent. Nat. Hist. Soc. (1903) p. 37 1904.

Shining grey with little or no black freckling and the lines very weakly expressed.

ab. *quadripustulata* Donovan. Brit. Ins. 13 p. 63 pl. 463 f. 1 & 2. 1808.

The main feature, as the name implies, is the white pupil to each ringed spot on all four wings. These are greyish, glossed with purple, with a common irregular line of transverse dots.

ab. *obscuriata* Prout. Trans. City Lond. Ent. Nat. Hist. Soc. (1903) p. 38 1904.

= *obscuraria* Hubner. Eur. Schm. Geom. pl. 27 f. 146 1796-99.

Dark grey or blackish yet somewhat variegated, traces of the pale ground still perceptible and the black transverse lines generally well visible.

Prout named this dark form presumably because Hubner's figure was meant to represent the typical form, but is much darker.

myrtillata Thnbg. aberrational forms etc.

ab. anastomosis Strand. Nyt. Mag. Naturv. (1904) p. 42.

The markings sharply black, the two transverse lines of the forewings touch each other below the middle and then separate again.

ab. interrupta Hein. Z. Ost. Ent. Ver. 13 p. 61 fig. 2 1928.

The inner and outer transverse lines of the forewing run from the costa to about the middle of the wing where they stop and are joined by a horizontal black streak. The lines are then completely interrupted by an area not confined within lines at all, after which the lines appear again but are filled with black to form a rectangular mark on the inner margin. The outer transverse line is also abnormal in that it starts just above the discoidal spot and actually touches it on its way down to the horizontal streak.

ab. cyanea Osthelder. Schmett. Sudbayern p. 525 1931.

Almost unicolorous grey-blue to dark blackish blue.

Possibly confined to Continental race.

ab. irrorata Osthelder. Schmett. Sudbayern p. 525 1931.

The greyish dusting, of the normal male, is only sprinkled on the light ground colour, which shows through. Common in the female. Type ♂.

ab. signata Osthelder. Schmett. Sudbayern p. 525 1931.

With strikingly broad, dark, prominent submarginal band on all wings.

Possibly confined to Continental race.

ab. destrigaria Wehrli. Mitt. Ent. Ver. Basel. 1917 p. 21.

The transverse lines of both wings absent, only the pale subterminal and its dark shadowing remaining more or less distinct.

coracina Esp. aberrational forms etc.

ab. wahlbergi Lampa. Ent. Tidskr. 1885 p. 100.

= argentea Sp. Schneider.

= argentacea Hirsche. Verh. zool.-bot. Ges. Wien 60 p. 416 1910.

The ground colour silvery-white instead of black-brown, the markings showing strongly.

ab. degenerata Cockayne. Ent. Rec. 65 p. 242 pl. 13 f. 10 1953.

On the forewings the median band is so much narrowed that it is reduced to three black marks, one on the costa, a second one, V shaped, about the middle of the wing, and a third on the inner margin.

ab. angustipennis Wehrli. Mitt. Schweiz Ent. Ges. 13 p. 170 1921.

Small form with the wings very narrow.

ab. nigrofasciata Wehrli. Mitt. Ent. Ver. Basel 1919 p. 8. (Culot. Geom. pl. 62 f. 1249)

Wings silver-grey, the median area of the forewings brown, forming a contrasting band. Hindwings with the basal half brown.

ab. solymossyi Dioszeghy. Verh. Siebenburg Ver. Naturw. 79-80 p. 270 fig.

hippocastanaria Hbn. aberrational forms etc.

ab. degenerata Hubner. Eur. Schmett. Geom. pl. 78 f. 405. 1809-13.

The figure shows the forewings unicolorous dark brown and the transverse lines absent except for the first, or costal, part of the basal line. The hindwings are yellowish with a trace of brown with a wide fuscous border.

ab. nigrescens Lempke. Tijdschr. Ent. 95 p. 314 1952.

Ground colour of the wings darkened, black-grey.

gen. aest. aestiva Hannemann. Z. Wiss. Ins. biol. 9 p. 97 1913.

The summer generation, smaller than spring form.

ab. gouini Fremont. Proc. Soc. lin. Bordeaux 79 p. 41 1927.

atomaria L. aberrational forms etc.

♀ *ab. virilis* Stauder. Int. Ent. Z. 9 p. 16 1915.

= *anomalaria* Vorbrodt. & Muller Rutz. Mitt. Schweiz Ent. Ges. 12 p. 490 1917.

= *brunnea* Maslowsky. Polsk. Pismo Ent. 2 p. 133 1923.

= *mariscolore*. Culot. Lamb. 29 p. 2 1929. (Culot Geom. pl. 65 f. 1296.)

The colour of the wings ochre-yellow, the colour of the normal males.

ab. nocturna Stauder. Int. Ent. Z. 9 p. 16 1915.

Forewings almost unicolorous dark brown-black, only in the middle field a hardly visible brownish-yellow sprinkling. Hindwings unicolorous brown-black without any yellowish mixing. Fringes white chequered, antennae and abdomen black, the latter a little light yellowish sprinkled.

ab. unicoloraria Staudinger. Cat. Ed. 2 p. 171 1871.

All wings completely fuscous, fringes yellow chequered.

ab. ustaria Fuchs. Stettin Ent. Ztg. 62 p. 134 1901.

Male. Ochreous yellow, darkened by the numerous irrorations, especially on the forewings, so that the markings show only as shadowy indistinct traces. Only in the middle of the margin of the forewing is an area without brown irrorations, appearing as a yellow spot.

ab. caloraria Stauder. Int. Ent. Z. 14 p. 37 1920.

= *gynaekoides* Heinrich. Dtsch. Ent. Z. 1923 Beift. p. 112

Males with predominant light yellow, dirty whitish and therefore female ground colour. The transverse markings much reduced, in one specimen the entire basal field and middle field of the forewings are yellow-white. Extreme specimens may be called *caloraria*.

ab. contrasta Lempke. Tijdschr. Ent. 95 p. 255 1952.

Female with not brown-black or dark brown lines but deep black, sharply contrasting with the white ground colour.

ab. nigrescens Lempke. Tijdschr. Ent. 95 p. 255 1952.

Male with the markings of the wings blackish, spaces between the transverse lines powdered with black.

ab. latelineata Biezanko. Arch. Naturg. 90 A 5 p. 242 pl. 2 f. 6 1924.

Female. Ground colour whitish-yellow, the transverse lines chocolate, the ones in the middle field very broad, 2 mm. broad at the costal margin of the forewings and at the inner margin of the hindwings. The markings very distinct.

ab. melanostigma Stauder. Int. Ent. Z. 14 p. 38 1920.

On all four wings there are clearly developed large black-brown middle points.

ab. fallax Stauder. Int. Ent. Z. 14 p. 38 1920.

Intensification of the dark elements at the apex of the forewings and a brightening of the basal and middle fields, therefore resembling the ♂ of *B. pinaria*

ab. pseudoglarearia Stauder. Int. Ent. Z. 14 p. 37 1920.

Females not larger than *Chiasma glarearia* Brhm. and virtually similarly marked and coloured.

C. glarearia is figured in Seitz 4 pl. 23 K fig. 3.

ab. dentaria Stauder. Int. Ent. Z. 14 p. 37 1920.

All or most of the transverse bands appear to be beautifully serrated.

ab. ophthalmaria Stauder. Int. Ent. Z. 14 p. 38 1920.

Very common form. Because of the positioning of the middle bands on the forewings a distinct eye of ground colour arises on the costal margin.

This presumably means that the second transverse line unites with the first median line in the middle of the wing, cutting off a roundish patch of ground colour which is bounded by the costa, some authors regard it as showing a small eye enclosed in the costal part of the antemedian line, but this is not common.

ab. bistrigaria Heydemann. Int. Ent. Z. 24 p. 160 pl. 3 f. 62 1930.

The two outer lines of the forewings run parallel with each other and with the outer margin and are continued on the hindwings. The other bands are only slightly indicated. The figure shows these two parallel lines standing out in striking contrast to the rest of the wing.

ab. pseudoclathrata Heydemann. Int. Ent. Z. 24 p. 162 pl. 3 f. 68-69 1930.

The postmedian and submarginal of the forewings, often also the antemedian line; are connected across the middle of the wing by a thick horizontal dark brown stripe so that the marking resembles a letter H.

ab. fasciata Heqvist. Ent. Tidskr. 71 p. 41 1950.

Fore and hindwings with a broad brown outer marginal band from fringe to submarginal line.

ab. mediofasciata Nordstrom. Svenska Fjarilar 1941 p. 311 pl. 44 f. 8b.

The transverse lines in the middle of the forewings united to form a dark, broad middle band.

ab. unimarginata Cornelsen. Int. Ent. Z. 16 p. 213 1923.

On the upperside the inner transverse lines fail, only the submarginal line remains.

ab. juncta Lempke. Tijdschr. Ent. 95 p. 256 1952.

The three inner transverse lines of the forewings are joined at the inner margin

ab. tenuilineata Lempke. Tijdschr. Ent. 95 p. 255 1952.

The transverse lines very thin, the dark striae in the male also thin and pale

ab. praeclara Cockayne. Entomologist 73 p. 97 figs. p. 98 1940.

The notable feature of this form is the complete absence of brown speckling on the wings and the absence of the submarginal band. The basal and two median lines of the forewings and the two median lines of the hindwings are clearly defined in deep chocolate-brown, the fringes chequered with ground colour and deep brown.

ab. ochrearia Rebel. Berger's Schmett. 1910 p. 414. (Barrett pl. 283 f. 1h.)
Unicolorous ochre-yellow, completely without markings.

ab. albicans Bubacek. Verh. zool.-bot. Ges. Wien 74 p. (10) 1924.

Female with the ground colour of all wings white, sparsely sprinkled with brown-black. Forewings with three transverse lines, the outer two confluent at the inner margin. Hindwings with two transverse lines. Marginal field pale from which the chequered fringes stand out very clearly.

ab. zetterstedtaria Heydemann. Int. Ent. Z. 24 p. 149 1930.

The ground colour of the male not whitish but grey-yellow or dirty ochreous-yellow with strong dark brown dusting.

Regarded as a subspecies by most authors, but Lempke includes it in his aberrations.

ab. kindervateri Schawerda. Z. Ost. Ent. Ver. 14 p. 119 1929.

The first and third dark brown transverse lines of the forewing are present but the second or middle one is completely absent. Ground colour ochreous-grey, the lines contrasting strongly. On hindwings the transverse band outside the discoidal spot is strongly developed.

ab. felicis Krausse. Arch. Naturg. 81 A 5 p. 166 1915.

Female. The ground colour white, only the dark bands margined with delicate pale yellow are in strong contrast. Presumably there is no dark dusting.

subsp. minuta Heydemann. Int. Ent. Z. 18 p. 269 pl. I figs. 5-12 1925.

According to Heydemann this race inhabits the whole of England; this is not correct since in the south the typical atomaria occurs.

The race is smaller, the ground colour of the males white to yellowish-white, in the typical form these are yellowish-brown.

ab. nigra Schneider. Polsk. Pismo. Ent. 19 p. 250

piniaria L. aberrational forms etc.

ab. *flavescens* B.-White. Scot. Nat. 3 p. 367 1876.

Male form with the ground colour decidedly yellow, the markings normal. In the typical form the ground colour is white.

ab. *kollerii* Dziurzynski. Berl. Ent. Z. 57 p. 8 pl. II f. 9 1912.

Male form with white ground colour and showing a black unbroken transverse stripe on forewings, often becoming a black-brown band.

ab. *dziurzynskii* Koller. Int. Ent. Z. 5 p. 341 1912.Male with the ground colour yellow as in *flavescens* B.-White, and showing an unbroken stripe on the forewings similar to that in the preceding *kollerii* Dziur.ab. *nana* Dziurzynski. Berl. Ent. Z. 57 p. 9 pl. I f. 8 1912.Dwarf form of *flavescens* B.-White.

The name would obviously apply to any form of the species.

ab. *tristis* Dziurzynski. (nom. preoc. Thierry-Mieg) Berl. Ent. Z. 57 p. 9 pl. 2 f. 17 1912

Male. Dark form without alteration of the typical ground colour, in some specimens the wings almost completely black, the white ground only being retained in the middle of the wing. Here also belong forms in which the hindwings are completely black and the forewings only somewhat darker, sometimes the black scaling of the hindwings is mixed with white.

ab. *tristis* Thierry-Mieg. Le Nat. 6 p. 437 1884.

Male. Entirely very dark grey-black, with slight grey paler areas in the places corresponding to the yellow blotches of the normal form. Fringes grey, chequered with black.

ab. *anomalaria* Huene. Berl. Ent. Z. 46 p. 317 pl. 6 f. 5 1901.

Male. Ground colour of the wings dirty light brown, the apical area and distal margins somewhat darker.

Very similar to the preceding form but apparently not so dark.

ab. *nigricaria* Backhaus. Ent. Nachr. 7 p. 277 1881.

Male and female. Unicolorous black, leaving only the markings visible on the "backside", presumably the underside.

ab. *nigricans* Dziurzynski. Berl. Ent. Z. 57 p. 9 pl. 2 f. 11 1912.Male. The ground colour of *flavescens* yellow tint is extensively restricted, on the forewings the ground colour only shows as on the hindwings, sometimes it is more or less visible in the middle of the wings also.

The figure shows the yellow on the forewings restricted to the basal area with a very slight tint of brownish-yellow faintly showing in the postmedian area.

ab. *albopuncta* Dziurzynski. Berl. Ent. Z. 57 p. 10 pl. 2 f. 14 1912.

Male. Unicolorous brown, at the base a little lighter but without any marking. Only at the hinder part of the forewings is a roundish white or yellowish spot which also shows on the underside.

ab. *albomacula* Dziurzynski. Berl. Ent. Z. 57 p. 10 pl. 2 f. 15 1912.= *funebria* Cockayne. Entomologist 72 p. 284 fig. p. 285 1939.Male. Upperside of forewing showing a white spot, and a white stripe, or streak, below it, all that remains of the normal white area, the rest of the wing dark brown. Hindwings showing a white, rather long, streak from near the base outwards almost to the margin. Cockayne did not state ground colour in *funebria*, but his type is of the yellow form & belongs to *flavomaculata* Hannemann. (below)ab. *flavomaculata* Hannemann. Int. Ent. Z. 11 p. 63 1917.Marking as in the preceding *albomacula* but with the ground colour yellow.

ab. hirschkei Dziurzynski. Berl. Ent. Z. 57 p. II 1912. pl. 2 f. 16.

Male. Ground colour yellowish-white, the brown marking runs from the tip of forewing down along the distal margin, the tip not black or brown as in the typical form. The two transverse stripes on the forewing resemble a double "comma" but do not reach the inner margin.

The figure shows the wings pale yellowish-brown with a narrow outer margin, a narrower brown inner margin and two rather curved transverse stripes, the median reaching the brown border of the inner margin but the postmedian only half the length. Hindwings pale yellowish-brown with a yellow middle streak from centre of wing to the margin, and two transverse brown bands with another on the margin.

ab. nivalis Dziurzynski. Berl. Ent. Z. 57 p. II pl. 2 f. 19 1912.

Male. The ground colour pure white, the usual black basal stripe and also the two transverse stripes on the hindwings covered over with white dusting.

ab. immacula Dziurzynski. Berl. Ent. Z. 57 p. II pl. 2 f. 18 1912.

Male. The characteristic basal streak on the forewings completely fails.

ab. albidaria Dziurzynski. Berl. Ent. Z. 57 p. 12 pl. 2 f. 20. 1912.

Male. The palest form, the brown-black area is pushed outwards towards the edges of the wings so that the yellow-white area is much increased.

The figure shows the forewing pale yellow with a brown margin, half its normal width on the costa, narrowing to its normal width just above the tornus. The usual basal streak is present.

ab. bergeri Dziurzynski. Z. Ost. Ent. Ver. 3 p. 57 fig. 3 1918.

Similar to the ♂ form *hirschkei* Dzs. but the ground colour is brownish yellow or leather-yellow. See *hirschkei* (above)

ab. flavescens Dziurzynski. Z. Ost. Ent. Ver. 3 p. 58 fig. p. 57 1918.

Dziurzynski describes this as the female of *flavescens* B. - White, with the ground-colour of *flavescens* males. There is no reason to suppose the females of this form are yellow, indeed they are not, as *flavescens* is the common form in the south of England but the females are very rarely yellow.

ab. costimaculata Lempke. Tijdschr. Ent. 95 p. 258 1952.

Male. The dark apical spot of the forewings is reduced to a rather broad dark band along the outer border, and a dark costal spot which is still connected with the marginal band by some dark suffusion.

ab. wolffi Krausse. Arch. Naturg. 81 A 5 p. 166 1915.

Male. The light colour of the costal margin of the forewing is yellow but the pale blotches going out from the base pure white, as are the blotches on the hindwings. Fringes also white.

ab. bupaloides Strand. Arch. Naturg. 85 A 4 p. 34 1920.

Male. The ground colour yellow and much reduced so that on the hindwings there remains only two irregular blotches, arranged longitudinally in areas 4 and 5, whilst the spots on the forewings are only about half as large as usual, irregularly bounded, and dark dusted.

?subsp. *mughusaria* Gumpfenberg. Syst. Geom. (Nova Acta K. Leop.-Carol. Dtsch. Akad. Nat. XLIX No. 4 p. 385 (157) 1887.)

According to the author the subspecies occurring in Scotland and Tirol.

Male. Smaller, not irrorated with fuscous, blotches paler and ending diffusely.

The description seems hardly sufficient.

Fletcher considers this as applying to the small *Alpine* form of *hirschkei* Dzs. p. 650

Geom. 275 continued.
p. 3.

piniaria L. continued.

ab. flavomughusaria Dziurzynski. Berl. Ent. Z. 57 p. II 1912.

Specimens of the preceding mughusaria Gmppg. with the ground colour yellow instead of white.

ab.rautheri Krausse. Arch.Naturg. 81 A 5 p.166 1915.
Female form, unicolorous grey without markings.

ab.fuscantaria Krulikovsky. Soc.Ent. 23 p.12 1908.
Female form, the normal rust-brown to orange-yellow ground colour is covered over by a more or less dark brownish, or rarely, blackish.

ab.fulvaria Dziurzynski. Berl.Ent.Z. 57 p.7 pl.I f.4 1912.
Female form with the ground colour dark rust-yellow, therefore darker than the typical form, the apical field of the forewings brownish-black, as is the distal border of the hindwings. The transverse stripes of the forewing are absent or only weakly indicated.

ab.strigata Dziurzynski. Berl.Ent.Z. 57 p.8 pl.I f.5 1912.
Of the same colour as fulvaria, the preceding, but with a black, unbroken transverse stripe on the forewings; there is often a second such stripe running parallel with the first.

ab.unicolora Strand. Schriften Naturf. Ges. Danzig, N. Folge. 10 p.285 1901.
Female form with unicolorous deep ochre-yellow wings.
Presumably without any markings at all.

ab.inversa Schulze. Int.Ent.Z. 6 p.336 1913.
Female form with dirty white ground colour, the markings dark brown and sharply contrasted, more resembling that of the male.

ab.fuscostrigata Dziurzynski. Z.Ost.Ent.Ver. 3 p.58 fig.p.57 1918.
Female. The markings as in strigata Dsr. (above) but the ground colour grey to grey-brown, instead of dark rust-yellow.

brunnearia Villers.

=ericetaria Villers. aberrational forms etc.

=plumaria Schiff.

subsp. scandinaviaria Staudinger. Cat. Ed. 3 p. 351 1901.

British specimens are included in this race with the exception of a local race in Co. Tyrone, Ireland.

subsp. tyronensis Cockayne. Ent. Rec. 60 p. 79 1948.

Characterized by its small size, narrower dark margins and fainter middle shade.

ab. fumosa Greer. Entomologist 54 p. 284 1921.

Almost black on all wings.

ab. intermedia-fumosa Turner. Ent. Rec. 33 p. 37 1921.

Transitional to the preceding fumosa Greer. The light ground colour, so far as it is seen, lies in irregular patches and streaks on both wings, across the disc black marking is scattered mainly in irregular ill-defined streaks, the black predominating, especially in the marginal areas, of the forewings. Hindwings with less black streaking and asymmetrical.

ab. deumbrata Lempke. Tijdschr. Ent. 95 p. 245 1952.

The central shade of the forewings fails completely.

ab. depuncta Nitsche. Verh. zool.-bot. Ges. Wien 64 p. (163) 1914.

= . depuncta Lempke. Tijdschr. Ent. 95 p. 244 1952.

The dark central spot on the forewings fails.

Lempke named this form under brunnearia because Nitsche's depuncta was Austrian and therefore belonged to plumaria Schiff, which Lempke claims is a separate species.

ab. demarginata Lempke. Tijdschr. Ent. 95 p. 245 1952.

The dark band along the outer margin of all wings fails.

ab. oelandica Wahlgren. Ent. Tidskr. 34 p. 165 fig. 2 1913.

Ground colour ash-grey, the inner transverse line distinct, the outer half of the middle field completely filled up by a dark brown transverse band bordered on both sides with black, the marginal band broad. Hindwings with weak broad middle band and a narrow marginal band.

ab. granataria Rambur. Cat. Lep. Andalouse pl. 17 f. 5

The median shade of the forewings is reduced to three separate spots, the marginal bands pale, the subterminal wavy line unusually distinct.

ab. pallidaria Staudinger. Cat. Ed. 3 p. 351 1901.

Greyish-white, the lines obsolete or weak.

ab. aragonensis Schawerda. Z. Ost. Ent. Ver. 12 p. 36 1927.

Black-brown form. In two specimens the dark brown predominates, in others black-brown. The specimens with dark brown ground also have a broad blackish marginal field. Hindwings unicolorous black-brown and underside black-grey. Some specimens have a black middle band and a similar subterminal band. Female unicolorous black-brown. The form has nothing in common with pyrenearia Bsd., and is without any trace of a pale subterminal line.

Described as an aberration but may well be a Spanish race.

ab. semivirgata Cockayne. Ent. Rec. 65 p. 242 pl. 13 f. 15 1953.

On the forewing the second or median line is displaced towards the base and united with the first line to form a broad band; the discoidal spot is external to it instead of lying in the median line as usual.

ab.bellaria Cockayne. Ent.Rec.66 p.67 pl.2 f.II 1954.

On forewings a short distance external to the discoidal spot there is a broad blackish-brown band running right across the wing from the costa to the inner margin; the border instead of being the usual dark brown is of the normal ground colour. On the hindwings the broad band is continued but is broader and touches the enlarged discoidal spot.

Geom. 277.

Siona Dup.

lineata Scop.
= dealbata L.

ab. obsoleta Stephan. Iris 39 p. 104 1925.

The discoidal mark and curved stripe on the underside of the forewings are absent.

ab. fasciata Hoffmann. Schmett. Steiermarks V. 1918 p. 85 Sep.

Underside showing a very well developed curved stripe on fore and hindwings.

chlorosata Scop.

= petraria Hbn.

aberrational forms etc.

ab. fuscata Lempke. Tijdschr. Ent. 94 p. 315 1951.

Ground colour of the forewings completely darkened, dark brown-grey to dark grey with a purplish tint, markings normal.

ab. unilinea Lempke. Tijdschr. Ent. 94 p. 315 1951.

The basal line of the forewings fails.

fagaria Thnbg.

= belgiaria Hbn. aberrational forms etc .

♂ ab. albescens Lempke. Tijdschr. Ent. 95 p. 261 1952.

Ground colour of the wings clear whitish. Not identical with albidaria Stgr., which is a subspecies.

♀ ab. fusca Lempke. Tijdschr. Ent. 95 p. 261 1952.

Ground colour of the wings brown-black, markings normal.

♂ ab. fleischmanni Rebel. Verh. zool.-bot. Ges. Wien 60 p. (17) fig. 4 1910.

Almost unicolorous black-grey, of the transverse stripes of the forewings only the outer one is marked by a light bordering. The black discoidal spots remain clear, the fringes, body and thorax light yellow-grey.

♂ ab. nigerrima Durand. Lamb. 34 p. 174 1934.

Melanistic male. Uniformly dense black with no pattern visible on the forewings, the nervures on all wings stand out in a more intense black, only the fringes form a very narrow silver margin.

♀ ab. signata Cockayne. Ent. Rec. 54 p. 35 pl. 2 f. 6 1942.

On the forewings all dark markings are intensified; ante and postmedian lines are very broad and unite towards inner margin, the discoidal spot large and the spots external to the postmedian are increased in size. In the median area there is black scaling along the subcostal and median nervures and nervure 2. On the hindwings the postmedian is well defined and there is some black scaling along the nervures in its vicinity.

ab. postdelineata Lempke. Tijdschr. Ent. 95 p. 261 1952.

On the hindwings upperside the postdiscal line fails.

ab. alba Krausse. Arch. Naturg. 78 A7 p. 168 1912.
Almost completely white with distinct markings.

ab. glabra Lempke. Tijdschr. Ent. 95 p. 264 1952.
Forewings without dark specks.

ab. unicolorata Seebold. Anal. Soc. Esp. Nat. Hist. 27 p. 140 1898.
Both wings unmarked on the upperside.

ab. obsoleta Lempke. Tijdschr. Ent. 95 p. 264 1952.
The transverse lines are very feeble or may even completely fail.
The last part of this description cannot stand since it is covered by the preceding unicolorata Seebold.

ab. impuncta Lempke. Tijdschr. Ent. 95 p. 264 1952. (descript. vol. 90 p. 147)
The central spot of the forewings is absent.

ab. crassesignata Lempke. Tijdschr. Ent. 95 p. 264 1952.
Forewings with thick transverse lines.

ab. conjuncta Lempke. Tijdschr. Ent. 95 p. 264 1952.
Both transverse lines on the forewings are connected by a horizontal line a little above the inner margin.

ab. clausa Lempke. Tijdschr. Ent. 95 p. 264 1952 (descript. vol. 82 p. 197)
The first and second transverse lines of the forewings are joined on the inner margin, forming a triangle.

ab. lativittata Cockayne. Ent. Rec. 65 p. 242 pl. 13 f. 2 1953.
On the forewing the whole of the basal area to the antemedian line is dark in colour, and the postmedian line on both wings is much increased in width to form a band 3 mm. wide

ab. fuscata Cockayne. Ent. Rec. 65 p. 242 pl. 13 f. 12 1953.
Ground colour of both wings with the exception of the inner margin of the hindwing is dark and of the same colour as that of the lines in normal specimens.

gen. aest. aestiva Schawerda.
The summer generation which is smaller.

ab. aurantiaca Lucas. Ent. Ber. (Amst.) 1960. 20. p. 230.
The ground colour of a much deeper yellow, fading [?shading?] to orange.
Lucas says that this colour is not the same as that of very fresh specimens, as is demonstrated by some bred specimens, which are much lighter.

gilvaria F. aberrational forms etc.

ab.vittata Cockayne. Ent.Rec. 65 p.242 pl.I3 f.I3 1953.

On the forewings the oblique postmedian line is increased in width to form a broad band, which is ill-defined on its distal aspect. A band on the hindwings is a little wider than usual.

ab.suffusa Cockayne. Ent.Rec. 65 p.242 pl.I3 f.I4 1953.

The ground colour of the forewings is normal, but so heavily powdered with dark scales of the same colour as the oblique stripe, that little of it is visible. The area just internal to the oblique stripe is the least powdered. Underside is darker.

ab.conspersaria Staudinger. Cat.Ed. 3 p.357 1901.

The ground colour more or less heavily sprinkled with fuscous.

ab.sublataria Fuchs. Jahrb. Nassau. Ver. Nat. 53 p.56 1900.

The upperside of both wings markingless. The underside of both wings with a strong brown discoidal spot.

ab.nigricans Jourdhoulle. Mem. Soc. Acad. Aube 47 p.III 1883.

Almost or quite unicolorous fuscous.

ab.fuscedinaria Fuchs. Jahrb. Nassau. Ver. Nat. 52 p.152 1899.

All wings upper and underside dusted thick rust-brown, upperside of hindwings finer.

Must be very similar to *suffusa* Cockayne but redder in tint.

subsp. *burrenensis* Cockayne. Ent. Gaz. 2 p.100 pl.2 f.5-8 1951.

The race from the Burren, Co. Clare, Ireland.

ab. fuscomarginata Lempke. Tijdschr. Ent. 95 p. 268 1952.

On the fore and hindwings the space between the submarginal line and the fringe is darkened so that a dark marginal band is formed.

ab. reducta Lempke. Tijdschr. Ent. 95 p. 268 1952.

One or more of the transverse lines fail. Sometimes the inner line on the forewing sometimes the first two lines, and the inner line on the hindwings, sometimes the second line on forewings and the inner line on the hindwings and finally the outer line may fail. Rarely in the ♂ but so regularly in the female that in this sex it can hardly be called a special form.

ab. respersaria Hubner. Eur. Schm. Geom. pl. 23 f. 125 1796-99.

The figure shows the second, or median, transverse line of the forewing very broad, the subterminal absent. Hindwings with only two bands, the outer one being completely absent. The wings are very finely dusted with brown.

ab. semifasciata Cockayne. Ent. Rec. 65 p. 243 pl. 13 f. 4 1953.

On both fore and hindwings the second and third lines are approximated and the space between them suffused with dark scales.

Cockayne is wrong in his description of herpetocaria Rmb., the lines in this form are not fused but meet on the inner margin to form a triangle which is not filled in with dark scales.

ab. atra Cockayne. Ent. Rec. 65 p. 243 pl. 13 f. 5 1953.

The whole of both fore and hindwings is a uniform dark slaty-grey, almost black, and entirely without markings. Abdomen the same colour but the thorax is whitish-grey.

subsp. meegerae Hbn. 3rd fig p. 288

= subsp. fuscognaria Lempke. Tijdschr. Ent. 95 p. 265 1952.

According to Lempke from the figures in Barrett and South, British specimens belong to this race described from Holland. The wings with darker specks and more sharply marked than the typical form, because the markings are of a dark brown to black-brown colour.

However, in the original was no mention of the British specimens.

ab. cretaria Eversmann. Faun. Volg.-Ural p. 395

Entirely or almost entirely white, the lines almost or completely absent. From a description by Prout, I have not seen the original.

ab. fumosa Fjeldborg. Flora og Fauna 51 p. 92 figs. 1-2 1945.

strigillaria Hbn. aberrational forms etc.

ab. fuscata Hannemann. Int. Ent. Z. II p. 63 1917.
Unicolorous grey-brown without any trace of the white ground colour.

? ab. grisearia Staudinger. Cat. Ed. 2 p. 175 1871.
Rather densely powdered with brown-grey, so that the pale ground colour is clearly visible in the shape of small specks. Transverse lines distinct. The female densely covered with brown-grey striae, but much less than in the male, the white ground colour visible, transverse lines distinct.
Lempke gives the description in Tijdschr. Ent. 95 p. 267, having seen Staudinger's Types.

ab. obscura Lempke. Tijdschr. Ent. 95 p. 266 1952.
Markings strongly darkened, the striae black-grey, the transverse lines blackish.

ab. contrasta Lempke. Tijdschr. Ent. 95 p. 267 1952.
Female. The white ground colour finely speckled with dark, the transverse lines very dark, sharply contrasting.

ab. diluta Lempke. Tijdschr. Ent. 95 p. 268 1952.
All the markings strongly bleached, but yet distinctly of the tint of the Dutch and British subsp. fuscognaria Lempke.

ab. herpeticaria Rambur. Cat. Lep. Andalus. pl. 21 f. 1. 1858.
The figure shows the first and second transverse lines of the forewing meeting, or united, at the inner margin, forming a triangle.

ab. dilatata Strand. Ent. Z. 25 p. 258 1912.
The first and second transverse lines of the forewing strongly broadened and darkened, and give the impression of a single dark brown band.

ab. armoris Oberth. Lep. Comp. 20 p. 281 pl. DLXI f. 4830-31 1923.
Oberthür names the "Var. A" of Guenee. (Sp. G. X p. 181 no. 1215.) The description of this reads -- Light brown shade over the whole of forewings as far as the subterminal, which this forms in some measure the shadow of the cubit. Female has the space between the median shadow and cubit almost entirely filled with brown. Oberthür's figure is also an aberration of the markings in the male specimen, the first and second transverse lines uniting in the middle and running down to the inner margin as a single brown line.

ab. quadripunctata Warnecke. Z. Wien. Ent. Ges. 29 p. 250 1944.
A discoidal spot present on all wings on the upperside.

ab. basiapproximata Lempke. Tijdschr. Ent. 95 p. 267 1952.
The first and second transverse line of the forewings run close together.

ab. discoapproximata Lempke. Tijdschr. Ent. 95 p. 267 1952.
On the forewings the second transverse line runs close to the third and on the hindwings the basal one close to the middle one.

ab. crassesignata Lempke. Tijdschr. Ent. 95 p. 267 1952.
Wings with thick heavy transverse lines.

ab. centrifasciata Lempke. Tijdschr. Ent. 95 p. 268 1952.
The second transverse line of the forewings and the basal one of the hindwings broadened to a dark band.



